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## MINISTRY OF LABOUR

### NOTIFICATION

New Delhi, the 19th November 1956

S.R.O. 2877.—The following draft of the Coal Mines Regulations, 1956, which the Central Government proposes to make in exercise of the powers conferred by section 37 of the Mines Act, 1952 (35 of 1952), and in supersession of the Indian Coal Mines Regulations, 1926, is published as required by sub-section (1) of section 59 of the said Act, for the information of all persons likely to be affected thereby; and notice is hereby given that the said draft will be taken into consideration on or after the 1st March, 1957.

Any objection or suggestion which may be received from any person with respect to the said draft before the date so specified will be considered by the Central Government.

## DRAFT REGULATIONS

### CHAPTER I

#### PRELIMINARY

**Regulation 1.** (Preliminary).—(1) These regulations may be called the Coal Mines Regulations, 1956.

(2) They extend to the whole of India except the State of Jammu and Kashmir.

(3) They shall apply to every coal mine.

(4) They shall come into force on \_\_\_\_\_.

**Regulation 2.** (Definitions).—In these regulations, unless there is anything repugnant in the subject or context—

(1) “the Act” means the Mines Act, 1952;

(2) “the Regional Inspector” means the Inspector of Mines in charge of the region or local area or areas in which the mine is situated or the group or class of mines to which the mine belongs, over which he exercises his powers under the Act;

(3) “the District Magistrate” in relation to any mine, means the District Magistrate or the Deputy Commissioner, as the case may be, who is vested with the executive powers of maintaining law and order in the district, in which the mine is situated: Provided that in the case of a mine which is situated partly in one district and partly in another, the District Magistrate for the purposes of these regulations shall be the District Magistrate authorised in this behalf by the Central Government:

(4) "Committee" means a committee appointed under Section 13 of the Act;

(5) "Schedule" means a Schedule appended to these regulations;

(6) "Form" means a form as set out in the First Schedule;

(7) "Quarter" means a period of three months ending on the 31st March, 30th June, 30th September or 31st December;

(8) "Month" means a calendar month;

(9) "Undermanager" or "Assistant Manager" means a person possessing a Manager's Certificate appointed in writing by the owner, agent or manager to assist the manager in the control, management and direction of the mine or part thereof, and who takes rank immediately below the manager, and thus superior to an overman and a sirdar;

(10) "Overman" means a person possessing a Manager's or Overman's Certificate and appointed by the manager in writing, under any designation whatsoever, to perform the duties of supervision or control in a mine or part thereof, and as such superior to a sirdar;

(11) "Official" means a person appointed in writing by the owner, agent or manager to perform duties of supervision in a mine or part thereof and includes an undermanager or assistant manager, an overman, a sirdar, an engineer and a surveyor;

(12) "Competent person" means a person who has attained the age of 21 years and who has been duly appointed in writing by the owner, agent or manager to supervise or perform certain work, or to supervise the operation of certain machinery, plant or equipment, and responsible for the duties assigned to him, and includes a shot firer;

(13) "Banksman" means a person appointed to superintend the lowering and raising of persons, tools and materials and the transmission of signals at the top of a shaft or incline;

(14) "Onsetter" means a person appointed to superintend the raising and lowering of persons, tools, materials and the transmission of signals at any inset or shaft bottom;

(15) "Machinery" means—

- any locomotive and any stationary or portable engine, boiler or steam apparatus which is, and
- any such apparatus, appliance or combination of appliances intended for developing, storing, transmitting, converting or utilising energy which is, and
- any such apparatus, appliance or combination of appliances if any power developed, stored, transmitted, converted or utilised thereby is, in the opinion of an Inspector, used or intended for use in connection with mining operations;

(16) "Material" includes coal, stone, debris, or any other material;

(17) "Tub" means a wagon, car, truck, tub or any other vehicle moving on rails for conveying material;

(18) "Shaft" means a vertical way or opening leading from the surface to workings belowground or from one part of the workings belowground to another;

(19) "Incline" means an inclined passage or road either on the surface or belowground;

(20) "Inset" means a landing or platform in a shaft, and includes an excavation therefrom between the top and the bottom of the shaft;

(21) "Road" means any part of a passage or gallery belowground which is maintained in connection with the working of a mine;

(22) "Working place" means any place in a mine to which any person has lawful access;

(23) "Face" means the moving front of any working place or the inbye end of any gallery, road or drift;

(24) "Goaf" means any part of workings belowground wherefrom a pillar or part thereof, or in the case of "longwall" workings, coal, has been extracted but which is not a working place;

(25) "Ventilating district" means such part of a mine belowground as has an independent intake airway commencing from a main intake airway and an independent return airway terminating at a main return airway; and in the case of a mine or part thereof which is ventilated by natural means, it includes the whole mine or part;

(26) "Auxiliary fan" means a forcing fan or an exhausting fan, used below-ground wholly or mainly for ventilating a face or faces or blind ends;

(27) "Approved safety lamp" and "approved electric torch" mean respectively, a safety lamp or an electric torch manufactured by such firm and of such type as the Chief Inspector may from time to time specify by notification in the Official Gazette;

(28) "Explosive" shall have the same meaning as is assigned to that term in the Indian Explosives Act, 1884, or any Act amending or repealing the same;

(29) "Permitted explosive" means an explosive manufactured by such firm and of such type as the Chief Inspector may from time to time specify by notification in the Official Gazette;

(30) "Misfire" means the failure to explode of an entire charge of explosives in a shot-hole;

(31) "River" means any stream or current of water, whether seasonal or perennial, and includes its banks extending up to the highest known flood level;

(32) "Public road" means a road maintained for public use and under the jurisdiction of any Government or local authority;

(33) "Coal" includes anthracite, bituminous coal, lignite or peat or any other form of carbonaceous matter sold or marketed as coal.

## CHAPTER II

### RETURNS, NOTICES AND RECORDS

**Regulation 3. (Notice of Opening).**—(1) The notice required by section 16 of the Act shall be submitted in Form I of First Schedule.

(2) When a mine has been opened, the owner, agent or manager shall forthwith communicate the actual date of opening to the Chief Inspector and to the Regional Inspector.

**Regulation 4. (Monthly Returns).**—On or before the 14th day of every month, the owner, agent or manager shall submit to the Chief Inspector correct returns, in Forms II, III and IV of First Schedule, of all raisings, despatches and stocks, employment and attendance of persons employed at the mine, hours of work and earnings during the preceding month. Copies of returns in Form II and III of First Schedule shall also be sent to the Regional Inspector.

**Regulation 5. (Annual Returns).**—(1) On or before the 20th day of February in each year, the owner, agent or manager shall submit to the District Magistrate and to the Chief Inspector annual returns in respect of the preceding year in Forms V to XII of First Schedule.

(2) If a mine is abandoned or working thereof is discontinued for a period exceeding 60 days or if a change occurs in the ownership of a mine, the returns required under sub-regulation (1) shall be submitted within 30 days of abandonment or change of ownership or within 90 days of discontinuance, as the case may be: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, allow such returns to be submitted up to any date not later than the 20th day of February in the year following that to which they relate;

Provided further that nothing in this sub-regulation shall be deemed to authorise the submission of any return later than the 20th day of February in the year following that to which it relates.

**Regulation 6.** (Notice of abandonment or discontinuance).—(1) (a) When it is intended to abandon a mine or seam or to discontinue working thereof for a period exceeding 60 days, the owner, agent or manager shall, not less than 40 days before such abandonment or discontinuance, give to the Chief Inspector and the Regional Inspector a notice stating the reasons for the proposed abandonment or discontinuance and the number of persons likely to be affected thereby.

(b) When on account of unforeseen circumstances a mine is abandoned or discontinued before the notice under clause (a) has been given or when without previous intention the discontinuance extends beyond a period of 60 days, the notice shall be given forthwith.

(2) Notwithstanding anything contained in sub-regulation (1), when it is intended to abandon, or discontinue for more than 60 days, any workings below-ground over which is situated any property vested in the Government or any local authority or any railway as defined in the Indian Railways Act, 1890, or any building or permanent structure not belonging to the owner, the owner, agent or Manager shall, not less than 30 days before the date of such abandonment or discontinuance, give notice of his intention to the Chief Inspector and the Regional Inspector.

(3) When a mine has been abandoned, or the working thereof has been discontinued over a period exceeding 60 days, the owner, agent or manager shall, within seven days of the abandonment or of the expiry of the said period, give to the Chief Inspector, the Regional Inspector and the District Magistrate notice in Form I of First Schedule.

**Regulation 7.** (Notice of re-opening).—(1) When it is intended to reopen a mine or seam after abandonment or after discontinuance for a period exceeding 60 days, the owner, agent or manager shall, not less than 30 days before resumption of mining operations, give to the Chief Inspector, the Regional Inspector and the District Magistrate notice in Form I of First Schedule.

(2) When a mine or seam has been re-opened, the owner, agent or manager of the mine shall forthwith communicate the actual date of re-opening to the Chief Inspector and the Regional Inspector.

**Regulation 8.** (Change in ownership and addresses etc).—(1) (a) When a change occurs in the name or ownership of a mine or in the address of the owner, the owner, agent or manager shall, within seven days from the date of the change, give to the Chief Inspector and the Regional Inspector a notice in Form I of First Schedule.

(b) When the ownership of a mine is transferred, the previous owner or his agent shall make over to the new owner or his agent, within a period of 30 days of the transfer of ownership, all plans, sections, reports, registers and other records maintained in pursuance of the Act, and of the regulations, rules, bye-laws and orders made thereunder, and all correspondence relating to the working of the mine relevant thereto; and when the requirements of this clause have been duly complied with, both the previous and the new owners of their respective agents shall forthwith inform the Chief Inspector and the Regional Inspector in writing.

(2) When any new appointment is made of an agent, manager, surveyor or undermanager or assistant manager, if any, or when the employment of any such person is terminated, or when any change of address of any agent or manager occurs, the owner, agent or manager shall send to the Chief Inspector and the Regional Inspector a notice in Form I of First Schedule within seven days from the date of such appointment, termination or change.

*Explanation:* Where the owner of a mine is a member of a firm or other association of individuals, a change—

- (a) of any partner in the case of a firm,
- (b) of any member in the case of an association,
- (c) of any director in the case of a public company, or
- (d) of any shareholder in the case of a private company,

shall also be intimated to the Chief Inspector and the Regional Inspector, within seven days from the date of the change.

**Regulation 9.** (Notice of accident).—(1) (a) When occurs in or about a mine—

- (i) an accident causing loss of life or serious bodily injury;
- (ii) an explosion, ignition, spontaneous heating, outbreak of fire;
- (iii) an occurrence of inflammable gas in a mine to which Regulation 144 does not apply;
- (iv) irruption of water;
- (v) breakage of ropes, chains or other gear by which persons are lowered or raised;
- (vi) an overwinding of cages while men are being lowered or raised;
- (vii) any accident due to explosives;
- (viii) a 'bump' in workings belowground; or
- (ix) a premature collapse of any part of the workings;

the owner, agent or manager shall forthwith inform the Regional Inspector about the occurrence by telephone or express telegram or by special messenger; and shall also, within 24 hours every such occurrence, send notice thereof in Forms XIII and XIV of First Schedule to the District Magistrate, the Chief Inspector, the Regional Inspector and the Coal Mines Labour Welfare Commissioner; and shall simultaneously post a copy of the notice on a special notice board outside the office of the mine and shall ensure that the notice is kept on the board in a legible condition for not less than 60 days from the date of such posting.

(b) When an accident causing loss of life or serious bodily injury occurs in or about a mine in connection with the generation, storage, transformation, transmission, supply or use of electrical energy, the owner, agent or manager shall also forthwith inform the Electrical Inspector of Mines by telephone, express telegram or special messenger.

(2) If death results from any injury already reported as serious under sub-regulation (1), the owner, agent or manager shall forthwith inform the Regional Inspector about the death by telephone, express telegram or special messenger; and shall also within 24 hours of the death, give notice thereof to the District Magistrate, the Chief Inspector, the Regional Inspector and the Coal Mines Labour Welfare Commissioner.

**Regulation 10.** (Notice of disease).—Where any person employed in a mine contracts any disease notified by the Central Government in the Official Gazette, the owner, agent or manager shall, within three days of his being informed of the disease, send notice thereof in Form XV of First Schedule to the District Magistrate, the Chief Inspector, the Regional Inspector and the Medical Inspector of Mines.

### CHAPTER III.

#### CERTIFICATES OF COMPETENCY AND OF FITNESS AND EXAMINATIONS

**Regulation 11.** (Board of Mining Examinations).—(1) For the purposes of these regulations there shall be constituted a Board of Mining Examinations, herein after referred to as "the Board". The Board shall consist of the Chief Inspector, who shall be the Chairman of the Board, and four members possessing technical qualifications and practical experience in coal mines fitting them to serve on the Board, who shall be appointed by the Central Government for a term of three years: Provided that on the expiry of any term for which he had been appointed, any member shall be eligible for re-appointment.

(2) A member of the Board (other than the Chairman) shall receive such remuneration as the Central Government may fix.

(3) An Inspector nominated by the Chief Inspector shall act as a Secretary to the Board.

**Regulation 12.** (Certificates granted by the Board).—(1) Certificates under these regulations shall be granted by the Board, and all decisions of the Board regarding the grant of such certificates shall be final.

(2) Certificates granted by the Board shall be valid throughout the territories to which these regulation extend, and shall be of the following kinds—

- (a) Manager's first class certificate of competency to manage a coal mine (in these regulations referred to as a First Class Manager's Certificate);

- (b) Manager's second class certificate of competency to manage a coal mine (in these regulations referred to as a Second Class Manager's Certificate);
- (c) Surveyor's certificate of competency to survey the workings of a coal mine (in these regulations referred to as a Surveyor's Certificate);
- (d) Overman's certificate of competency to carry out inspections and duties as required under these regulations (in these regulations referred to as an Overman's Certificate);
- (e) Sirdar's Certificate of competency to carry out inspections and duties as required under these regulations (in these regulations referred to as a Sirdar's Certificate);
- (f) Shot-firer's certificate of competency to fire shots in a mine (in these regulations referred to as a Shot-firer's Certificate); and
- (g) Certificate of competency to test for the presence of inflammable gas in a mine (in these regulations referred to as a Gas-testing Certificate).

**Regulation 13.** (Examinations and Examiners).—(1) Certificates shall be granted to successful candidates after such examination and in such form as the Board may stipulate.

(2) The examinations shall be held at such times and at such centres as may be fixed by the Board, and shall be conducted by examiners who shall be appointed by the Board.

(3) The examiners so appointed shall be subject to the orders of the Board in respect of all matters relating to the conduct of the examinations, and shall receive such remuneration as the Board, with the sanction of the Central Government, may fix.

(4) The Board may make bye-laws as to the conduct of the examinations and as to the granting of certificates of fitness as required under these regulations, and shall, so far as may be practicable, provide that the standard of knowledge required for the grant of certificates of any particular class and the standard of medical fitness shall be uniform throughout the territories to which these regulations extend.

(5) Every bye-law made by the Board under this regulation shall be published in the Official Gazette; and no such bye-law shall have effect until three months after the date on which it was so published.

**Regulation 14.** (Submission of applications).—(1) Applications for an examination conducted by the Board shall be made to the Board not less than 60 days prior to the date fixed for the examination and on a form supplied for the purpose.

(2) Notice regarding the date and place of the examinations for the Manager's Surveyor's or Overman's certificates shall be published under the order of the Board, in such periodicals as the Board may direct, not less than 30 days prior to the date fixed by the Board for receiving applications.

**Regulation 15.** (General qualifications of candidates).—(1) (a) No person shall be admitted as a candidate at any examination for a Manager's Surveyor's Overman's, Sirdar's or Shot-firer's Certificate unless he is 21 years of age and holds a valid first-aid certificate of the standard of the St. John Ambulance Association (India): Provided that if any candidate satisfies the Board that he has not had sufficient opportunity to obtain such first-aid certificate, the Board may admit him to the examination on such conditions, if any, as it thinks fit to impose.

(b) Every application for any examination as aforesaid shall be accompanied by:

- (i) a certificate of age granted by a Gazetted Officer or by the headmaster of a school of a Higher Secondary or equivalent standard; Provided that in case of a person holding a matriculation or equivalent certificate, such certificate shall be submitted as evidence of age,
- (ii) a medical certificate of general fitness, including powers of eyesight and hearing, obtained not more than three years prior to the date

of his application, from a qualified medical practitioner not below the rank of a Civil Assistant Surgeon; and

(iii) a certificate from some person of good repute as to the general good conduct and sobriety of the candidate.

(2) No person shall be admitted as a candidate at any examination for a Manager's or Surveyor's Certificate unless he has passed the matriculation examination of a recognised university, or its equivalent.

(3) No person shall be admitted as a candidate at any examination for a Manager's or an Overman's Certificate unless he has obtained a Sirdar's and a Gas-testing Certificate: Provided that if a candidate satisfies the Board that he has not had sufficient opportunity to obtain the Sirdar's or Gas-testing Certificate, the Board may admit him to the examination on such conditions, if any, as it thinks fit to impose.

**Regulation 16.** (Practical experience of candidates for Managers' Examinations).—(1) No person shall be admitted as a candidate at any examination for a First or Second Class Manager's Certificate unless he has satisfied the Board that he has had practical experience in a coal mine for a period of not less than five and three years, respectively: Provided that in the case of a candidate who has received a diploma or degree in mining engineering at an educational institution or university approved in that behalf by the Board, such period shall be reduced to three and two years, respectively.

(2) The nature of the practical experience required of a candidate for a Manager's Certificate shall be experience approved by the Board and gained in workings belowground in one or other of the following capacities in a coal mine having an average monthly output of not less than 1,000 tons—

- (a) as a workman, or a mining apprentice having direct practical experience of getting coal and of stonework, timbering and repairing; or
- (b) as an underground official:

Provided that the Board may approve a part of the period of practical experience which has been obtained in any of the aforementioned capacities in an opencast mine or in a mine other than a coal mine, upto a period not exceeding one year.

**Regulation 17.** (Practical experience of candidates for Surveyor's Examinations).—No person shall be admitted as a candidate at any examination for a Surveyor's Certificate unless he has satisfied the Board that he has had two years' practical experience of surveying, of which at least six months shall have been practical experience of surveying the workings belowground of a mine having an average monthly output of not less than 1,000 tons: Provided that approved attendance at classes in theoretical and practical surveying at an educational institution or university approved in that behalf by the Board shall be considered to be practical experience of surveying other than practical experience of surveying the workings of a mine belowground.

**Regulation 18.** (Additional qualifications of candidates for Sirdar's and Shotfirer's examination).—(1) No person shall be admitted as a candidate at any examination for a Sirdar's or Shot-firer's Certificate unless he has satisfied the Board that he is literate and has had practical experience in a coal mine for a period of not less than three and two years, respectively: Provided that in the case of a candidate for Shot-firer's Certificate, such practical experience shall include experience in shot-firing for a period of at least six months:

Provided further that such period shall be reduced to one year in the case of a candidate who has received a diploma or degree in mining engineering at an educational institution or university approved in that behalf by the Board.

(2) The nature of practical experience required of candidates for the aforesaid examination shall be experience of a type approved by the Board.

**Regulation 19.** (Overman's Service Certificates).—The Board may, for a period of two years after the coming into force of these regulations, grant without a written examination, an Overman's Certificate to any person who has attained the age of 30 years and who produces satisfactory documentary evidence of having worked in the capacity of an overman, superior to a sirdar, in coal mines for a period of not less than seven years.

**Regulation 20.** (Examination Fees).—(1) Fees on the following scale shall be paid in respect of every application for admission to an examination—

	Rs.
(a) in the case of an examination for a First Class Manager's Certificate	50
(b) in the case of an examination for a Second Class Manager's Certificate	30
(c) in the case of an examination for a Surveyor's Certificate	20
(d) in the case of an examination for an Overman's Certificate	10
(e) in the case of an examination for a Surveyor's Certificate	20
(f) in the case of an examination for a Shot-firer's Certificate	3
(g) in the case of an examination for a Gas-testing Certificate	2

(2) The amount of any fee referred to in sub-regulation (1) less the following amounts, shall be returnable to the person by whom it has been paid if the application of such person for admission to the examination is rejected—

- (a) Rupee one in the case of the fee paid for admission to an examination for a Shotfirer's or a Gas-testing Certificate.
- (b) Rupees two in the case of the fee paid for admission to an examination for a Sirdar's or Overman's Certificate.
- (c) Rupees five in any other case.

(3) The Chief Inspector may permit the refund—

- (a) of any fee paid under sub-regulation (1) where the candidate has died before the examination or where the fee has been erroneously paid; and
- (b) of any amount paid in excess of that specified in sub-regulation (1).

**Regulation 21.** (Exchange Certificates).—(1) The Board may grant to any person holding a Manager's or Surveyor's Certificate granted under any Act for the regulation of mines for the time being in force in any other country, a certificate of similar class under these regulations if the person satisfied the Board with documentary evidence that he possesses the requisite experience and produces a certificate from some person of good repute as to his general good conduct and sobriety: Provided that in the case of an applicant for a Manager's Certificate he has undergone, for a period of not less than six months, a course of practical training in India in the manner and in the mines approved by the Chief Inspector for the purpose, and has also passed such examination as the Board may stipulate.

(2) If a person intends to apply for the grant of a Manager's Exchange Certificate as provided in sub-regulation (1), he shall, before commencement of his practical training in India, submit to the Chief Inspector an application in a form supplied for the purpose.

(3) Fees on the following scale shall be paid in respect of any application for certificates to be issued under this regulation—

	Rs.
(a) in the case of a Manager's First Class Certificate ..	50
(b) in the case of a Manager's Second Class Certificate ..	30
(c) in the case of a Surveyor's Certificate .. ..	20

**Regulation 22.** (Duplicate Certificates).—If any person proves to the satisfaction of the Board that he has, without any fault on his part, lost or been deprived of a certificate granted to him under these regulations, the Board may, upon realisation of the following fees, and subject to such terms and conditions as it thinks fit, cause a copy of the Certificate to be delivered to him—

	Rs.
(a) in the case of Manager's or Surveyor's Certificate ..	5
(b) in the case of an Overman's or Sirdar's or Shot-firer's or Gas-testing Certificate .. .. ..	2

The word "DUPLICATE" shall be stamped across every such copy.

**Regulation 23.** (Metal checks).—(1) The Chief Inspector shall issue to every person to whom the Board grants a Sirdar's or Shotfirer's or Gas-testing Certificate, a metal check marked with the registered number of the certificate.

(2) The person to whom such metal check is issued shall, so long as the corresponding certificate remains in force, retain such check in his immediate possession while on duty, and shall not transfer it or dispose of it in any way. In the event of the corresponding certificate being suspended or cancelled under Regulation 26, the check shall be returned to the Chief Inspector.

(3) No person other than the holder of the corresponding certificate for the time being in force shall be in possession of a metal check issued under sub-regulation (1).

(4) If any person proves to the satisfaction of the Chief Inspector that he has, without any fault on his part, lost or been deprived of the metal check issued to him under sub-regulation (1), the Chief Inspector may, on receipt of a fee of one rupee and upon such terms and conditions as he may stipulate, cause a second metal check bearing the registered number of his certificate to be delivered to him. The letter "D" shall be stamped on the reverse of every such check.

**Regulation 24.** (Certificates to be delivered to the manager).—The holder of an Overman's, Sirdar's, Shot-firer's or Gas-testing Certificate shall deliver such certificate to the manager of the mine in which he is for the time being employed. The manager shall, in exchange for the certificate, deliver to such person a receipt for the same; he shall retain the certificate in the office at the mine so long as the holder thereof is so employed, and shall return it to the holder on his ceasing to be so employed.

**Regulation 25.** (Court of Enquiry into fitness of a person to hold a Manager's or Surveyor's Certificate).—(1) If in the case of a person who is the holder of a Manager's or Surveyor's Certificate, a representation is made to the Central Government by the Chief Inspector that the person has been convicted of an offence made punishable by the Act with fine which may extend to Rs. 500 or more or with imprisonment, or is, by reason of incompetence or gross negligence or misconduct in the performance of his duties under the Act or under the regulations, rules, bye-laws and orders made thereunder, unfit to continue to hold such a certificate, the Central Government may appoint a Court to hold an inquiry to determine as to whether or not such person is fit to continue to hold such certificate.

(2) The following provisions shall have effect with respect to the constitution and procedure of the Court holding such an inquiry—

- (a) The Court shall consist of a person or persons appointed by the Central Government, and may conduct the inquiry either alone or with the assistance of an assessor or assessors so appointed.
- (b) The Central Government shall pay to the person or persons constituting the Court and to any assessor appointed to assist the Court, such remuneration and allowance as it may fix.
- (c) The inquiry shall be public and shall be held at such place as the Central Government may appoint.
- (d) The Central Government may appoint any person to undertake the conduct of the case on their behalf.
- (e) The Central Government shall, before the beginning of the inquiry, furnish to the person whose fitness to continue to hold a certificate is to be inquired into, a statement of the case on which the inquiry is instituted.
- (f) The said person may appear at the inquiry either in person or by counsel, solicitor or agent approved by the Court, and may give evidence or call such witnesses as he thinks fit.
- (g) If a majority of the persons constituting the Court thinks fit, the person whose conduct is under inquiry may be required to deliver up his certificate at any time before or during the inquiry; and such person shall be bound to comply with such requisition, unless he shows sufficient cause to the contrary.
- (h) The Court shall, for the purpose of the inquiry, have all the powers of a civil court under the Code of Civil Procedure, 1908 (5 of 1908) for the purpose of enforcing the attendance of witnesses and compelling the production of registers, plans, sections, reports and other

records and material objects; and any person required as aforesaid to attend or to furnish any information shall be deemed to be legally bound to do so within the meaning of Section 176 of the Indian Penal Code (45 of 1860).

- (i) The Court, for the purpose of the inquiry, may exercise such of the powers of an Inspector under the Act as it may think necessary or expedient.
- (j) The Court shall, subject to the foregoing, have powers to regulate the procedure of the inquiry and to adjourn it from time to time.
- (k) A person appearing as a witness before the Court shall be entitled to be paid by the Central Government such expenses as would be allowed to a witness attending a civil or criminal court.
- (l) At the conclusion of the inquiry, the Court shall send to the Central Government a report containing a full statement of the case together with its opinion thereon and such account of or extracts from, the evidence as it may think fit; and if it considers that the certificate in question should be cancelled or suspended, it shall add a recommendation to that effect. In the event of disagreement between the members of the Court, a dissentient from the opinion of the majority may forward a separate report to the Central Government with a statement of his recommendations.

(3) The Central Government may, on the recommendation of the Court, cancel or suspend a certificate; and if it does so, the fact of such cancellation or suspension shall;

- (a) if the certificate, or a duplicate thereof granted under regulation 22, is produced, be endorsed upon it; and
- (b) be notified in the Official Gazette.

**Regulation 26.** (Suspension of an Overman's, Sirdar's, Shotfirer's or Gas-testing Certificate).—(1) If in the opinion of the Regional Inspector, a person to whom an Overman's, Sirdar's Shot-firer's or Gas-testing Certificate has been granted is guilty of incompetence, negligence or misconduct in the performance of his duties, the Regional Inspector may, after giving the person an opportunity to explain his conduct, suspend his certificate.

(2) When the Regional Inspector has suspended a certificate under sub-regulation (1), he shall, by requisition addressed to the manager of the mine concerned, obtain the certificate so suspended and the corresponding metal check if any, and thereafter shall report the suspension to the Board. The Regional Inspector may, if he thinks fit, recommend to the Board that the certificate so suspended be cancelled.

(3) The Board may, after such inquiry as it thinks fit, either confirm or modify or reduce the suspension, or cancel the certificate; and the decision of the Board which shall be recorded on the certificate shall be final.

**Regulation 27.** (Validity of Overman's, Sirdar's, Shotfirer's and Gas-testing Certificates).—(1) No Overman's, Sirdar's or Shotfirer's Certificate shall remain valid for a period of more than five years unless the certificate bears an endorsement by the Regional Inspector to the effect that the holder thereof has passed a medical test for the powers of eyesight and hearing, held by a qualified medical practitioner appointed by the Chief Inspector.

(2) An application in respect of an examination of fitness in pursuance of sub-regulation (1) shall be made to the Chief Inspector, accompanied by a fee of five rupees.

(3) No Gas-testing Certificate shall remain valid for a period of more than three years, unless it bears an endorsement by the Regional Inspector to the effect that the holder thereof has passed another examination in gas-testing.

**Regulation 28.** (Retirement age for managers and officials etc).—(1) No person shall act as a manager or an official or a shot-firer or a winding engineer in a mine after attaining the age of 60 years unless he has obtained, within the preceding one year, a medical certificate of fitness certifying him fit to carry on the duties prescribed for him in the Act and in the regulations, rules, bye-laws and orders made thereunder: Provided that if the Chief Inspector or the Regional Inspector is of the opinion that a person as aforesaid, though less than 60 years of age, is medically unfit to carry on the duties prescribed for him in

the Act and in the regulations, rules, byelaws and orders made thereunder, the Chief Inspector or the Regional Inspector may, by an order in writing, require such person to obtain a medical certificate of fitness within such period, not exceeding three months, as he may specify therein; and no such person shall continue to act in any capacity as aforesaid after the period so specified unless he has obtained a medical certificates of fitness.

(2) The certificate of fitness as aforesaid shall be obtained from such authority and in such manner as the Board may specify in byelaws made by them for the purpose.

#### CHAPTER IV INSPECTORS AND MINE OFFICIALS

**Regulation 29.** (Qualifications of Inspectors).—(1) After the coming into force of these regulations, no person shall be appointed as Chief Inspector unless he holds a degree or diploma in mining engineering of an educational institution approved by the Central Government and also a First Class Manager's Certificate granted under these regulations.

(2) After the coming into force of these regulations, no person shall be appointed as an Inspector unless he holds a degree or diploma in mining engineering of an educational institution approved by the Central Government and also a First Class Manager's Certificate granted under these regulations: Provided that—

- (i) in relation to electrical machinery installed in mines, a person holding a degree or diploma in electrical engineering of an educational institution approved by the Central Government may be so appointed;
- (ii) in relation to other machinery or mechanical appliances installed in mines, a person holding a degree or diploma in mechanical engineering of an educational institution approved by the Central Government may be so appointed; and
- (iii) in relation to the provisions of the Act and of the regulations, rules and byelaws made thereunder which relate to matters concerning the health and welfare of persons, a person holding a degree or diploma in medicine, surgery and/or in social science or labour welfare, as the case may be, of an educational institution approved by the Central Government may be so appointed.

(3) The Central Government may appoint any person whom they consider competent, as an Inspector notwithstanding that such person does not possess the qualifications prescribed in that behalf by this regulation and may likewise insist on qualifications higher than such qualifications.

**Regulation 30.** (Definitions).—For the purpose of this Chapter—

- (a) every system of workings belowground inter-connected in such a manner that communication is practicable from any one part of the system to any other part by means of channels or drifts below-ground shall be deemed to constitute one mine. If access from one system of such workings belowground to another such system is not practicable, each such system shall be deemed to constitute a separate mine; Provided that where two or more systems of workings below-ground not belonging to the same owner, for any special reasons are inter-connected, each such system shall be deemed to constitute a separate mine;

Provided further that where special conditions exist, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit or require the division of any one such system into two or more separate mines.

- (b) the expression 'average output' means the average per month of the total output of the mine or mines during the preceding quarter.

**Regulation 31.** (Qualifications and appointment of managers).—(1) (a) No mine shall be opened, worked or reopened unless there is a manager of the mine, being a person duly appointed and having such qualifications as are required by these regulations.

(b) No person shall act or be employed as a manager unless he is 23 years of age and is paid by, and is directly answerable to, the owner or agent of the mine.

(2) Except as hereinafter provided in sub-regulation (6), and subject to the provisions of sub-regulation (3), no person shall act or continue to act, or be appointed, as manager of a mine or mines the average output of which corresponds to the figures given in column (1) of the table below unless he holds the corresponding qualifications given in column (ii) thereof;

(i)	(ii)
(a) In excess of 2500 tons per month.	A First Class Manager's Certificate
(b) In excess of 600 tons but not exceeding 2500 tons per month.	A First or Second Class Manager's Certificate.
(c) In any other case.	A First or Second Class Manager's Certificate or a Manager's Permit granted under sub-regulation (5).

Provided that the Chief Inspector, may, by an order in writing, direct that in the case of any such mine as is referred to in clause (b) of the table, the manager thereof shall be the holder of a First Class Manager's Certificate, and that in the case of any such mine as is referred to in clause (c) of the table, the manager thereof shall be the holder of a First or Second Class Manager's Certificate:

Provided further that if any mine-undertaking consists of two or more separate mines and if in the opinion of the Chief Inspector they are not sufficiently near to one another to permit of daily personal supervision being exercised by one manager, he may, by an order in writing, require the appointment of a manager for each of such mines.

(3) When under the provisions of sub-regulation (2) and of regulation 146, a person holding a First or Second Class Manager's Certificate has been appointed as manager, a person holding lower qualifications shall not, except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify be so appointed during the succeeding twelve months, notwithstanding any reduction in the average output of the mine.

(4) No person shall act, or be appointed, as manager of more than one mine except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify. No such permission shall have effect for a period exceeding 12 months, unless renewed. The Chief Inspector may at any time, by an order in writing, vary or revoke any such permission, and such order shall be final and shall remain operative until withdrawn.

(5) (a) The Chief Inspector may, after holding such examination as he may deem necessary and subject to such conditions as he may specify, grant to any person holding an Overman's Certificate, a permit (in these regulations referred to as a Manager's Permit) authorising such person to act as the manager of any specified mine, the average output of which does not exceed 600 tons.

(b) A Manager's Permit shall be valid only for such period, not exceeding 12 months, as may be specified therein. The Chief Inspector may renew any Manager's Permit for a further period not exceeding 12 months notwithstanding that such permit has already been so renewed.

(c) A fee of Rs. 10 shall be payable in respect of every application for the grant of a Manager's Permit and of Rs. 5 for every application for renewal thereof.

(d) A Manager's Permit may be cancelled at any time by the Chief Inspector by an order in writing without assigning any reason for such cancellation; and such order shall be final.

(6) The Chief Inspector may, by an order in writing and subject to such conditions as he may specify, authorise any person whom he may consider competent, to act as manager of any mine or mines for a specified period, notwithstanding that such person does not possess the qualifications prescribed in that behalf by sub-regulation (2), and may by a like order revoke any such authority at any time, and such order shall be final.

(7) (a) Where by reason of absence or for any other reason, the manager is unable to exercise daily personal supervision or is unable to p his

under the Act and under the regulations, rules, bye-laws and orders made thereunder, the owner, agent or manager shall authorise in writing a person whom he considers competent to act as manager of the mine:

Provided that—

- (i) such person holds a Manager's or Overman's Certificate;
- (ii) no such authorisation shall have effect for a period in excess of 30 days, except with the previous consent in writing of the Chief Inspector; nor without a like consent shall a second authorisation be made to take effect upon the expiry of the first;
- (iii) the owner, agent or manager, as the case may be, shall forthwith send to the Chief Inspector and the Regional Inspector a written notice intimating that such an authorisation has been made, and stating the reason for the authorisation, the qualifications and experience of the person authorised, and the date of the commencement and ending of the authorisation; and
- (iv) the Chief Inspector or the Regional Inspector may, by an order in writing, revoke any authority so granted, and such order shall be final and remain operative until withdrawn.

(b) The person so authorised shall, during the period of such authorisation, have the same responsibility, discharge the same duties, and be subject to the same liabilities as the manager.

(8) (a) No manager shall vacate his office without giving due notice in writing to the owner or agent at least 30 days before the day on which he wishes to vacate his office.

(b) No owner or agent shall transfer, discharge or dismiss a manager unless—

- (i) the manager has been relieved by a duly qualified person as prescribed under sub-regulation (2); or
- (ii) the manager has been given due written notice of such transfer, discharge, or dismissal at least 30 days before the day on which he is required to vacate his office:

Provided that in case of discharge or dismissal the manager shall have a right of appeal to the Chief Inspector whose decision thereon shall be final and binding upon the owner, agent and manager.

(c) Nothing in sub-regulation (7) shall confer on the owner, agent or manager the right to authorise during any period of such notice, any person not duly qualified to manage the mine under sub-regulation (2), to act as the manager except in case of illness or other causes over which the manager has no control, or with the previous written permission of the Chief Inspector and under such conditions as he may specify;

Provided that the Chief Inspector shall not permit any such authorisation for a period exceeding 60 days from the date on which the mine is worked without a manager duly qualified under sub-regulation (2).

(d) A copy of every such notice and authorisation shall forthwith be sent to the Chief Inspector and to the Regional Inspector by registered post.

(9) (a) The owner or agent shall provide reasonable residential accommodation for the manager and the undermanager or assistant manager within a distance of three miles from all mine openings; and every manager, undermanager and assistant manager shall reside in the accommodation so provided: Provided that where special difficulties exist which render compliance with these provisions not reasonably practicable, the Chief Inspector may, by an order in writing, and subject to such conditions as he may specify therein, grant exemption from the same.

(b) No manager shall be entrusted by the owner or agent with any work, nor shall he himself perform any work, which will necessitate his frequent or prolonged absence from the mine.

(c) If any dispute arises as to the foregoing clauses of this sub-regulation, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(10) No manager shall act as agent or undermanager or assistant manager or in any other supervisory capacity of another mine.

**Regulation 32.** (Appointment of undermanagers or assistant managers).—In every mine the average output of which exceeds 7,000 tons, the manager shall

be assisted by undermanagers or assistant managers on a scale of at least one for every 3,000 tons or part in excess of the 7,000 tons aforesaid: Provided that in a mine where the average output exceeds 20,000 tons, at least one of the undermanagers or assistant managers as aforesaid shall hold a First Class Manager's Certificate:

Provided further that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit or require the appointment of undermanagers or assistant managers in variation with these provisions.

**Regulation 33.** (Appointment of engineers).—(1) At every mine where machinery is used, an engineer or other competent person shall be appointed to hold general charge of such machinery, and to be responsible for its installation, maintenance and safe working. A notice of every such appointment, giving the name and full particulars of the qualifications and experience of the person so appointed, shall be sent to the Regional Inspector within seven days of such appointment. In case of any dispute regarding the sufficiency of the qualifications of such engineer or competent person, it shall be referred to the Chief Inspector whose decision thereon shall be final;

Provided that after such date as the Central Government may notify in the Official Gazette, no person shall be so appointed in a mine having an average output of more than 5,000 tons, unless he holds a degree or diploma in electrical or mechanical engineering of an educational institution approved by the Central Government.

(2) Where by reason of temporary absence for any cause, the engineer or competent person appointed under sub-regulation (1) is unable to perform his duties, the manager shall authorise in writing a person whom he considers competent to act in his place:

Provided that—

- (a) Notice of every such authorisation shall be sent to the Regional Inspector forthwith;
- (b) No such authorisation shall have effect for a period in excess of 30 days except with the previous written consent of the Regional Inspector; and
- (c) The Regional Inspector may, by an order in writing, revoke any authority so granted and such order shall remain operative until withdrawn.

**Regulation 34.** (Appointment and qualifications of senior officials).—(1) At every mine, one or more overmen shall be appointed to hold general charge of all the districts of the mine on each working shift.

(2) Every person employed as an official subordinate to the manager and superior to the sirdar shall hold either a Manager's Certificate or an Overman's Certificate.

**Regulation 35.** (Appointment of surveyors).—(1) At every mine, a person of not less than 23 years of age and holding a Surveyor's Certificate shall be appointed to be the surveyor for carrying out the surveys and levellings and for preparing the plans and sections required by the regulations and rules. A notice of every such appointment, giving the name and full particulars of the qualifications of the person so appointed, shall be sent to the Regional Inspector within seven days of such appointment.

(2) No person shall undertake the duties of a surveyor of more than one mine or any other duties of supervision under the regulations without the previous permission in writing of the Regional Inspector, and subject to such condition as he may specify. The Regional Inspector may at any time, by an order in writing, vary or revoke such permission; and such order shall remain operative until withdrawn.

**Regulation 36.** (Appointment of officials and competent persons).—(1) The manager shall appoint such number of competent persons, including officials and technicians, as is sufficient to secure—

- (a) adequate inspection of the mine and the equipment thereof;
- (b) a thorough supervision of all operations in the mine;
- (c) the installation, running and maintenance, in safe working order, of all machinery in the mine; and
- (d) the enforcement of the requirements of the Act and of the regulations, rules, bye-laws and orders made thereunder.

(2) It shall be the responsibility of the manager to see that the persons so appointed are competent to perform the duties assigned to them. No person shall be so appointed unless he is paid by the owner or agent and is answerable to the manager.

(3) Copies of all appointments made under sub-regulation (1) shall be entered in a bound paged book kept for the purpose. A list of all such competent persons shall also be maintained.

(4) Without prejudice to the requirements of sub-regulation (2), every manager on taking over charge of a mine, shall satisfy himself that all persons already appointed under sub-regulation (1) are competent to perform the duties assigned to them; and if he finds them competent, he shall either countersign their authorisations or issue fresh ones. If a manager considers a person to be incompetent to carry out certain duties under the Act and under the regulations, rules, bye-laws and orders made therein, and there is a dispute in the matter, the case shall be referred to the Chief Inspector whose decision thereon shall be final and binding on both parties.

**Regulation 38.** (Duties of mine-workers).—(1) (a) Every person shall strictly concerned with the management and working of a mine shall be given to any person except by or under the authority of, or in consultation with and through, the manager.

## CHAPTER V

### DUTIES AND RESPONSIBILITIES OF WORKMEN, COMPETENT PERSONS AND OFFICIALS

**Regulation 38.** (Duties of mine-workers).—(1) (a) Every person shall strictly adhere to the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder, and to any order or direction issued by the manager or an official with a view to the safety or convenience of persons or the proper discipline of the mine, not being inconsistent with the Act and these regulations; nor shall he neglect or refuse to obey such orders or directions.

(b) No person shall interfere with, impede or obstruct any other person in the discharge of his duties, nor shall he offer or render any service, or use any threat, to any other person with a view to preventing him from complying with the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder or from performing his duties faithfully. If any person who receives any such offer or threat, fails to inform the manager forthwith, he shall also be guilty of a breach of these regulations.

(c) No person shall negligently or wilfully omit to do anything necessary for the safety of the mine or of the persons employed therein.

(2) (a) No person shall, except with the authority of an official, remove or pass through any fence, barrier or gate, or remove or pass any danger signal.

(b) Subject to any directions that may be given by an official, no person shall, except for some justifiable purpose, go into any part of the mine other than that part in which he works, or travel to or from his working place by any road other than the proper travelling road.

(3) No person shall, while on duty, throw any stone or other missile with intent to cause injury, or fight or behave in a violent manner.

(4) Every person receiving any injury in the course of his duty shall, as soon as possible, report the same to an official.

(5) Every person shall, immediately before proceeding belowground and immediately after returning to the surface, have his name recorded in the register maintained under sub-section (4) of Section 48 of the Act.

(6) No person shall sleep whilst on duty.

(7) (a) No person shall test for inflammable gas with a naked lamp, or brush or waft out inflammable gas. Should any person having a flame safety lamp find himself in the presence of inflammable gas, he shall not throw the lamp away or attempt to blow it out; but shall shelter it, hold it near the floor, avoid jerking it, and take it steadily into fresh air. Where he cannot take it into fresh air, he shall smother out the light or extinguish it in water.

(b) No person shall, when trying or examining for the presence of inflammable gas with a flame safety lamp, raise the lamp higher than may be necessary to allow the presence of inflammable gas to be detected.

(c) Every person using a safety lamp shall take proper care of it and shall not place it within two feet of the swing of any tool, except in the case of a lamp which is actually worn attached to the body of such person. In the case of a flame safety lamp he shall not place it on the floor unless it is necessary to do so for the safe performance of any particular work; and if the lamp becomes damaged, he shall at once carefully lower the flame until it is extinguished, and shall, at the first opportunity, report the damage to his superior official.

**Regulation 39.** (Duties of competent persons).—No competent person shall—

- (a) depute another person to perform his work without the sanction of his superior official;
- (b) absent himself without having previously obtained permission from such official for the term of his absence or without having been relieved by a duly competent person; and
- (c) without permission from such official perform, during his shift, any duties other than those for which he has been so appointed.

**Regulation 40.** (Duties of officials).—(1) Every official shall carry out the duties assigned to him by the manager, undermanager or assistant manager in accordance with the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder.

(2) Every official shall, to the best of his power, see that persons under his charge understand and carry out their respective duties.

**Regulation 41.** (Duties and responsibilities of managers).—(1) (a) In every mine daily personal supervision shall be exercised by the manager; and in case of workings belowground he shall visit and examine such workings on at least four days in every week to see that safety in every respect is ensured;

Provided that one such inspection shall be made during the night shift at least once a fortnight; and Provided further, that when owing to any unavoidable cause he is unable to carry out the aforesaid duties or inspections, he shall record the reason for the same in the book kept under clause (b).

(b) The manager, the undermanager and the assistant manager, if any, shall each record, in a bound paged book kept for the purpose, the result of each of his inspections and every major irregularity or contravention of the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder observed during the course of such inspection, and the action taken by him to rectify the same.

(2) The manager shall make arrangements for all overmen and other officials to meet him or the undermanager or assistant manager once in every working day for the purpose of conferring on matters connected with their duties.

(3) The manager shall see that a sufficient supply of proper materials and appliances for the purpose of carrying out the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder and for ensuring the safety of the mine and the persons employed therein, is always provided at the mine; and if he be not the owner or agent of the mine, he shall report in writing to the owner or agent when anything is required for the aforesaid purpose, that is not within the scope of his authority to order. A copy of every such report shall be recorded in a bound paged book kept for the purpose.

(4) The manager shall assign to every competent person his particular duties shall on his appointment make over to him a copy of the regulations, rules and bye-laws and of any orders made thereunder which affect him, and shall take all possible steps to ensure that every such person understands, carries out and enforces the provisions therein contained.

(5) The manager shall provide every overman with a tracing, up to a date within one month, showing the workings of the district belowground assigned to him. Where any work of reduction or extraction of pillars is being carried out such tracing shall show clearly the order in which such reduction or extraction is to be carried out.

(6) The manager shall examine all reports, registers and other records required to be made or kept in pursuance of the Act or of the regulations, rules, bye-laws and orders made thereunder, and shall countersign the same and date his counter-signature. He may, however, by an order in writing, delegate his duty to an undermanager or assistant manager except in cases where a specific provision is made requiring the manager to countersign a report or register.

(7) The manager shall give attention to, and cause to be carefully investigated, any representation or complaint that may be made to him as to any matter affecting the safety or health of persons in or about the mine.

(8) When any accident resulting in serious bodily injury to any person, or in loss of life occurs in a mine, the manager shall inspect the site of accident as soon as possible, and shall also, either himself or through an undermanager or assistant manager, have an inquiry made into the cause and circumstance of the accident. The result of every such enquiry and a plan of the site of the accident showing details, shall be recorded in a bound paged book kept for the purpose.

(9) The manager shall take such disciplinary steps against such persons as the Regional Inspector may require or approve in respect of any contravention of the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder.

**Regulation 42.** (Duties and responsibilities of undermanagers or assistant manager).—The undermanager or assistant manager shall carry out the duties assigned to him by the manager; and shall during the absence of the manager, have the same responsibility, discharge the same duties, and be subject to the same liabilities as the manager.

**Regulation 43.** (Duties and responsibilities of overman).—The overman or other competent person appointed under regulation 34 shall strictly observe the following provisions, namely—

(1) (a) He shall have responsible charge and control of the district of the mine assigned to him by the manager, and shall, while on duty, carry a tracing of the workings of such district.

(b) He shall, in his district, make the inspections and reports required by the regulations.

(c) He shall be responsible to see that the subordinate officials and competent persons in his district carry out their respective duties in a proper manner.

(d) He shall, to the best of his power, enforce in his district the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder; and shall, subject to the control of the manager and the undermanager or assistant manager, if any, give such directions as may be necessary to ensure compliance with those provisions, and to secure the safety of the district and the safety and proper discipline of the persons employed therein.

(2) He shall see that sufficient supplies of timber, brattice and other necessities required for the safe working of his district are kept in convenient places therein.

(3) (a) He shall see that every air-crossing, stopping door, brattice and other ventilation device is maintained in good order.

(b) He shall in his district, see that the ventilation is effective; and when brattices or air pipes are required to be used for the ventilation of the working places, he shall see that they are kept sufficiently advanced to ensure that an adequate amount of air reaches the working places.

(4) (a) He shall see that all tracks and tramlines are properly laid, graded and ballasted.

(b) He shall see that the manholes on the haulage planes are kept safe, clear of any obstruction, and properly white-washed.

(c) He shall see that stop-blocks, runaway switches and other safety devices are fixed and used as required under the regulations, that drags or back-stays are provided and regularly used behind tubs ascending inclines, and that a sufficient supply of suitable sprags is provided where tubs are loaded on a gradient or lowered down a gradient by hand.

(d) He shall, if he finds any of the ropes, chains, signals, brakes, jig wheels, and posts or other apparatus in use in his district to be in an unsafe condition, stop the use of the same forthwith.

(5) He shall give prompt attention to the removal of any danger observed by or reported to him, and shall see that dangerous places are adequately fenced off.

(6) He shall, under the directions of the manager, see that approved safety lamps are used and naked lights excluded wherever and whenever danger from inflammable gas is apprehended.

(7) (a) He shall devote the whole of his time to his duties, and shall visit each working place in his district as often as may be necessary or possible.

(b) He shall not, except for a justifiable cause, leave the mine until he has finished the inspections required under these regulations and any other duties that he is required to perform, or until relieved by a duly appointed substitute.

(c) He shall, if the mine is worked by a succession of shifts, confer with official succeeding him and give him such information as may be necessary for the safety of his district and of persons employed therein.

(8) He shall, at the end of his shift, record in a bound paged book kept for the purpose, a general report on the performance of all his duties during the shift, including anything concerning the proper working of the mine and the safety of persons employed in his district.

(9) He shall be responsible to see that except for the purpose of inspection, examination and repairs, every person other than an official or a haulage attendant travels by the travelling road.

**Regulation 44.** (Duties and responsibilities of sirdars).—The sirdar or other competent person appointed under regulation 113 shall strictly observe the following provisions, namely—

(1) (a) He shall have responsible charge and control of the district of the mine assigned to him by the manager.

(b) He shall take reasonable means to ensure the proper observance of the requirements of the Act and of the regulations, rules, bye-laws and orders made thereunder by persons under his charge; and shall, as soon as practicable, report any contravention thereof to his superior official.

(2) (a) He shall make such inspections and reports as are required by these regulations; and in making such examination, he shall pay particular attention to edges of the goaf, if any, for checking supports and for presence of gas.

(b) Except in the case of a mine worked by a succession of shifts, he shall, on completion of the first inspection of the district, proceed to the station appointed under Regulation 113 and instruct all persons as to their places of work and as to any special precaution necessary to be observed by them.

(c) If he finds any person in a place other than the one assigned to him, he may order such person out of the mine, and shall forthwith report the matter to his superior official.

(d) He shall ensure that no inexperienced person is employed on any work except under the supervision of an experienced person.

(3) (a) He shall see that the roof and sides of all travelling roads to, and working places in his district are made and kept secure.

(b) He shall see that in every working place, the height of which measured from floor to roof exceeds 10 feet, there is kept—

(i) a suitable wooden 'bunton' or pole shod with iron at one end (except in a section to which Regulation 144 applies), by which all parts of the roof may be effectively tested by a person standing on the floor; and

(ii) a ladder of suitable length.

(c) He shall report to his superior official any deficiency in timber, appliances and other necessaries required for the safe working of the district.

(4) Where either of the two ways affording means of egress from the district to the surface is not ordinarily used for travelling, he shall travel, once at least in every seven days, the whole of such way in order to make himself thoroughly acquainted with the same.

(5) He shall see that no timber support is withdrawn except by means of a safety prop-withdrawer.

(6) (a) He shall take care that any dangerous operation is carried out with due precaution, and shall be present throughout whenever any work of clearing falls of ground and setting of supports therein is being carried out.

(b) He shall cause the entrance to every place which is not in actual use or in course of working or extension, to be effectively fenced across the whole width.

(c) If he finds any accumulation of inflammable or noxious gases, he shall carry out the provisions of Regulation 142 and shall not remove such accumulation until he has received instructions in that behalf from his superior official.

(7) He shall have power to send out of the mine any person under his charge infringing or attempting to infringe any provision of the Act and of the regulations, rules, bye-laws and orders made thereunder, or failing to carry out any direction given with regard to safety, and shall report in writing any such infringement or attempted infringement or failure to the manager.

(8) He shall, on receipt of notice of an accident to any person in his district, proceed at once to the place of accident, inspect the place and, if required, supervise the rescue operations and render first-aid; and shall report or send notice of the accident to the manager or undermanager or assistant manager.

(9) (a) He shall devote the whole of his time to his duties, and shall not leave the mine until the end of the shift or until relieved by a duly appointed substitute.

(b) If the mine is worked by a succession of shifts, he shall, before leaving his district, confer with the sirdar or competent person succeeding him; and shall acquaint him with all matters requiring his personal attention and give him such other information as may be necessary for the safety of his district and of the persons employed therein.

**Regulation 45.** (Duties and responsibilities of shotfirers)—The shotfirer shall—

- (a) carry out his duties in accordance with the provisions of the regulations and bye-laws and of any orders made thereunder with respect to the transport and use of explosives;
- (b) be responsible for the observance by his assistance, if any, of such provisions and of any direction with a view to safety which may be given to them;
- (c) not hand over any explosives to any unauthorised person;
- (d) see that clay, sand or other suitable stemming material is available in sufficient quantities at convenient places;
- (e) be present when shots are being charged and shall himself fire the shots; and
- (f) be responsible, when a shot has misfired, for seeing that the place is adequately fenced, and that the provisions of Regulation 177 are strictly observed.

**Regulation 46.** (Duties of timberman).—The timberman shall carry out the orders of the overman, sirdar or other competent person with respect to the securing of roof and sides. He shall at once report to the sirdar or other competent person any shortage of timber in his district. He shall also be responsible to see that wood-cuttings are not left in any working belowground.

**Regulation 47.** (Duties of fan-attendants).—The person in charge of the main mechanical ventilator shall—

- (a) keep the ventilator running at the speed fixed by the manager;
- (b) examine the machinery and observe the pressure-recording or water gauge and the speed-indicator at intervals of not more than one hour, and shall enter the readings of the indicator in a bound paged book kept for the purpose at the fan-house;
- (c) immediately report to his superior official any stoppage of, damage to, or defect or derangement in the machinery, or any unusual variations in the water-gauge or other indicators; and shall also immediately report any unusual circumstances in regard to mine ventilation which may come to his notice; and
- (d) where the ventilator is continuously operated, shall not leave his post until relieved by a duly appointed substitute.

**Regulation 48.** (Duties of lamp-room incharges).—The competent person in charge of a safety lamp room—

- (a) shall be responsible for ensuring that all lamps in the safety lamp room are properly maintained in accordance with the provisions of the regulations;

- (b) shall see that the safety lamp room is kept in a neat and tidy condition, and that all damaged and defective gauzes, glasses and other parts of safety lamps are not kept or stored in such room;
- (c) shall see that fire extinguishers or other means of dealing with fires provided in the safety lamp room are in good condition and readily available for use; and
- (d) shall see that all records required by the regulations for the issue, return and maintenance of safety lamps are properly maintained.

**Regulation 49.** (Duties and responsibilities of surveyors).—(1) The surveyor shall—

- (a) make such accurate surveys and levellings, and prepare such plans and sections, as the manager may direct or as may be required by the Act or by regulations or rules framed thereunder, and shall sign the plans and sections and date his signature;
- (b) be responsible for the accuracy of any plan and section, or tracings thereof, that has been signed by him;
- (c) inform the manager in writing of the full facts when workings of the mine have approached to about 250 feet from the mine boundary or from disused or waterlogged workings; and
- (d) draw the attention of the manager in writing to doubts which may exist concerning the accuracy of the plans and sections prepared under these regulations.

(2) Nothing in clauses (c) and (d) of sub-regulation (1) shall absolve the owner, agent or manager of his responsibility under the Act and the regulations and rules made thereunder.

**Regulation 50.** (Duties and responsibilities of engineers).—The engineer or other competent person appointed for the purpose—

- (a) shall hold general charge of all machinery at the mine;
- (b) shall be responsible for the proper installation, maintenance and safe working of such machinery;
- (c) shall, when any machinery is shifted or newly installed, see that the machinery is given a trial run before it is put into use; he shall be present during every such trial run; and
- (d) shall be present throughout whenever any work of installing, changing or recapping of any winding rope, or of installing, changing or uncalling any suspension gear, is being carried on.

**Regulation 51.** (Duties of winding engineman).—(1) At the beginning of his shift the winding engineman shall examine the engine and all appliances in his charge, and shall satisfy himself that they are in good working order.

(2) Every winding engineman shall during his shift keep the winding engine and apparatus connected therewith properly cleaned and oiled.

(3) The winding engineman shall not allow any unauthorised person to enter the engine room or in any way to interfere with the engine.

(4) The winding engineman shall report immediately to the engineer or other competent person appointed for the purpose any defect which he has noticed in the engine, brake, indicator, drum, rope or other appliances under his charge.

(5) The winding engineman shall thoroughly acquaint himself with, and carefully attend to, the prescribed code of signals; and shall not start the engine until he has received the proper signal to do so. If the signal is indistinct, he shall not start the engine until it has been repeated and he clearly understands it.

(6) The winding engineman shall avoid jerk in starting, running and stopping the engine, and shall cause the cage or other means of conveyance to be brought gently to rest at any stopping place.

(7) While persons are being lowered or raised in the shaft, the winding engineman shall drive the engine at a reduced speed.

(8) The winding engineman shall on no pretext leave the handle or brake whilst the engine is in motion, or while the cage or other means of conveyance is in midshift in the course of winding or while persons are at work in the shaft.

(9) Whenever any winding engineman has occasion to leave the engine he shall cut off the power and secure the drums with the brake.

**Regulation 52.** (Duties of banksmen and onsetters).—(1) Every banksman or onsetter shall observe the following provisions—

- (a) He shall, subject to the orders of a superior official, have full control of the top or bottom of shaft and the inset, as the case may be; and shall report to such official any person who, without authority, gives a signal or disobeys instructions.
- (b) He shall thoroughly acquaint himself with, and carefully attend to, the prescribed code of signals, and shall properly transmit the signals by the means provided. He shall not act on any signal the correctness of which he is in doubt, except a signal which he believes to be 'to stop'.
- (c) He shall devote the whole of his time to his duties, and shall not leave his post during the period of his duty. Where the mine is worked by a succession of shifts, he shall not leave his post unless relieved by a duly appointed substitute.
- (d) He shall not allow more than the authorised number of persons to enter the cage or other means of conveyance at any one time.
- (e) He shall not, unless specially authorised in writing by the manager in that behalf, allow any person when riding in a cage or other means of conveyance, to take with him any bulky material other than tools and instruments.
- (f) After any stoppage of winding for repairs or for any other cause for a period exceeding two hours, he shall not allow any person to ride in a cage or other means of conveyance unless it has been run at least one complete trip up and down the working portion of the shaft.
- (g) He shall, after persons have entered the cage, see that the cage gates on both sides are in position and closed, before signalling for the cage to be lowered or raised.
- (h) He shall not allow any unauthorised person to handle tubs in or out of the cage.
- (i) He shall not, at any entrance into a shaft or inset which is provided with gates or fences not worked by the cage or other means of conveyance, begin to remove the gate or fence until the cage or other means of conveyance has stopped at the entrance, and shall close the gate before he has signalled the cage or other means of conveyance away; he shall not permit any other person to open or interfere with the gate.
- (j) He shall see that all fences and gates provided at the top of the shaft or at any inset are in position.
- (k) He shall not permit any unauthorised person to remove a fence or gate; and if he notices any defect in such fence or gate, he shall immediately inform his superior official.
- (l) He shall keep the top of the shaft or the inset and the floor of every cage free from loose material.
- (m) He shall, when long timber, pipes, rails or other material projecting over the top of a cage or other means of conveyance are lowered or raised, see that the projecting ends are securely fastened to the rope, chains or bow.
- (n) He shall when he suspects that the cages are not working smoothly in the shaft or when he hears anything unusual happening in the shaft while the winding engine is working, immediately give signal to the winding engineman to stop the engine.
- (o) He shall immediately report to his superior official any defect in the signalling installation.

(2) (a) At the beginning of his shift, the banksman shall see that the keys are in proper working order.

(b) The banksman, when he is informed of any danger in the shaft, shall not allow any person to descend except for the purpose of examination or repairs; and during the time that such examination or repairs are going on, shall be on for signals.

(c) The banksman shall not permit any person descending the shaft to carry any intoxicating drink or drug, or allow any intoxicated person to descend.

**Regulation 53** (Duties of haulage attendants).—(1) Every haulage engineman, brakesman and signaller shall thoroughly acquaint himself with, and carefully attend to, the prescribed code of signals.

(2) The person in charge of any tub or set of tubs, which it is intended to send up any haulage plane or incline on which drags or back-stays are required to be used, shall securely fix the drag or back-stay or cause it to be so fixed before such tub or set of tubs is set in motion.

(3) The person in charge at the top of any haulage plane or incline shall see that the stop-blocks are blocking the way, before allowing any tub to be brought on to the top landing; and shall cause the tubs to be securely coupled up to each other and to the rope or chain, before the stop-block is opened. In case any alternative safety appliance is provided, he shall cause the same to be brought into use on every such occasion.

(4) The person who is responsible for the attachment, to the haulage rope, of any tub or set of tubs at any stopping place on any haulage plane or incline, shall see that no person remains in a position of danger at or near such stopping place while the rope is in motion.

(5) The person in-charge at the top or bottom of the incline shall see that no unauthorised person rides on any tub.

(6) Before a train of side tipping tubs is set in motion, the person in charge shall see that the safety catches of all such tubs are properly secured.

**Regulation 54** (Duties of locomotive drivers etc.).—(1) The locomotive driver shall sound the whistle when the locomotive is approaching a level crossing or any place where any person is at work or where the driver's sight is intercepted.

(2) When tubs or wagons are being pushed in front of the locomotive, the shunter shall accompany the leading wagon.

(3) The locomotive driver shall not leave a locomotive unattended away from the places where it is housed, unless he has ensured that it cannot be set in motion by any unauthorised person.

(4) The locomotive driver shall ensure that no unauthorised person drives, handles or rides on a locomotive.

(5) The locomotive driver shall not set the locomotive in motion until audible warning has been given by him to persons whose safety may be endangered.

**Regulation 55** (Duties of coal-cutting machine drivers and fitters).—(1) No coal-cutting machine shall be flitted or otherwise moved with the cutting tool in motion, except in the actual process of cutting. If the cutting tool cannot be locked out of gear securely, it shall be removed before flitting is started.

(2) No person shall make any repairs or adjustments to a coal-cutting machine or shall put in or take out a pick, until he has made such arrangements as will prevent the mechanism being inadvertently put into motion while such operation is being performed.

(3) No person shall open or replace the cover of any electrical part of a coal-cutting machine, except under the supervision and in the presence of an engineer, electrician or other competent person appointed for the purpose.

(4) Where a machine is required to work on a gradient exceeding 1 in 5, an effective contrivance to prevent the machine running back shall be provided and used.

**Regulation 56** (Duties of magazine incharge).—The magazine incharge—

(a) shall be responsible for the proper receipt, storage and issue of explosives in and from the magazine;

(b) shall maintain such records of explosives so received, stored and issued, as are required by the rules made under Indian Explosives Act, 1884, or under any Act amending or repealing the same, and under the Act and under the regulations, rules, bye-laws and orders made thereunder;

- (c) shall not issue explosives to any person other than a competent person; and when explosives are returned to the magazine, shall re-issue such explosives before issuing fresh stock;
- (d) shall record the name of various competent persons, and the quantity and nature of explosives issued to each of them; and shall similarly record the quantity and nature of explosives returned to the magazine by each person;
- (e) shall securely lock each canister before issuing it to the competent person and also check whether the canister is returned to the magazine in locked condition; he shall not issue explosives in any canister which is not in proper repair or which cannot be securely locked;
- (f) shall not allow any unauthorised person to enter the magazine; and
- (g) shall, if he discovers any shortage of explosives in the magazine, forthwith inform the manager in writing.

**Regulation 57** (Duties of register keepers).—(1) Every person appointed to keep registers or other records required by or under the Act or under the regulations, rules and bye-laws made thereunder, or to make entries therein, shall make the necessary entries with reasonable despatch

(2) During the whole time that persons are present belowground, the attendance clerk shall be on duty at the top of the shaft or incline.

(3) If after the commencement of a shift any official or a competent person has not got his attendance recorded in the register maintained under section 48(4) of the Act, the attendance clerk concerned shall, within two hours after the commencement of the shift, report the fact in writing to the manager or the undermanager or assistant manager or other official in charge of the shift.

## CHAPTER VI

### PLANS AND SECTIONS

**Regulation 58** (General requirements about mine plans).—(1) Every plan prepared or submitted in accordance with the provisions of the regulations shall—

- (a) show the name of the mine and of the owner, and the purpose for which the plan is prepared;
- (b) show the true north, or the magnetic meridian and the date thereof;
- (c) show a scale of the plan, at least 10 inches long and suitably subdivided;
- (d) unless otherwise provided, be on a scale of 100 feet to the inch: Provided that the Chief Inspector may permit or require the plans to be prepared on any other suitable scale; and
- (e) be properly inked in on durable paper or on tracing cloth, and be kept in good condition.

(2) The conventions shown in Second Schedule shall be used in preparing all plans and sections required by the regulations.

(3) The plans and sections required by the regulations shall be accurate and maintained up-to-date within three months: Provided that where any mine or seam or section is proposed to be abandoned or the working thereof to be discontinued or rendered inaccessible, the plan and section shall be brought up-to-date before such abandonment or at the time of discontinuance, as the case may be, unless such abandonment or discontinuance has been caused by circumstances beyond the control of the owner, agent or manager, in which case the fact that the plan or section is not up-to-date shall be recorded on it.

(4) Plans and sections required to be maintained under the regulations shall be kept available for inspection in the office at the mine, and shall not be removed therefrom, except by or by the approval in writing of an Inspector, unless a true copy thereof has been kept therein.

**Regulation 59** (Types of plans).—(1) The owner, agent or manager of every mine shall keep the following plans and sections:

- (a) A surface plan showing every surface feature within the boundaries, such as telephone, telegraph or power transmission line, wafer-main, tramline, railway, road, river, water-course, reservoir, tank, borehole,

shaft and incline opening, opencast working, subsidence and building on the surface.

- (b) An underground plan showing the position of the workings of the mine belowground, every bore-hole and shaft with depth, incline opening, cross-measure drift, goaf, fire-stopping or seal, water-dam (with dimensions and other particulars of construction), pumping station, and haulage road, and every important feature within the boundaries such as railways, road, river, stream, water-course, tank, reservoir, opencast working and building which is within 600 feet of any part of the workings measured on the horizontal plane; also the general direction and rate of dip of the strata, such sections of the seam as may be necessary to show any substantial variation in the thickness or character thereof and showing the working section, and such sections of the strata sunk or driven through in the mine or proved by boring as may be available, the position of every roll, washout, dyke and every fault with the amount and direction of its throw and the depth of every shaft. Whenever this plan is brought up-to-date, the then position of the workings shall be shown by a dotted line drawn through the ends of the workings and such dotted line shall be marked with the date of the last survey.
- (c) Where a seam has an average inclination of more than 30 degrees from the horizontal, one or more vertical mine section or sections, as may be required by the Regional Inspector, showing a vertical projection of the mine workings.
- (d) A ventilation plan, and section where necessary, showing the system of ventilation in the mine, and in particular, the general direction of air-current, every point where the quantity of air is measured, every air-crossing, ventilation door, stopping and any other principal device for the regulation and distribution of air, every fire-stopping and its serial number, position of fire-fighting equipment, every water-dam with dimensions and other particulars of construction, every pumping, telephone and ambulance station, every room used for storing inflammable material, and every haulage and travelling road.

(2) Separate plans and sections for the workings of each seam or of each separate section of each seam shall be kept in respect of clauses (b), (c) and (d) of sub-regulation (1): Provided that in respect of plans maintained under clause (b) of sub-regulation (1), combined plans of all seams lying within 30 feet of each other being worked at the mine shall also be kept; and in the combined plans, workings in different seams shall be shown in different colours.

(3) (a) The plans maintained under clauses (a) and (b) of sub-regulation (1) shall also show surface contour lines drawn at vertical intervals not exceeding 10 feet.

(b) The plans maintained under clause (b) of sub-regulation (1) shall also show spot levels on the floor of the workings—

(i) along all haulage roads—

(a) at every road junction except in roads where tramping is done by manual means; and

(b) at points not more than 500 feet apart in all other roadways; and

(ii) in the case of headings which have been discontinued either temporarily or permanently, also at the end of such headings. Where two drifts in stone or two galleries in coal, pass over one another, this shall be clearly indicated on the plans, with appropriate noting, if necessary.

(c) A permanent bench-mark shall be established on the surface, and all levels taken above and belowground shall be referred to a plane in relation to such bench-mark. Particulars of the bench-mark, together with its height above Mean Sea Level, shall be shown on the plans required to be maintained under these regulations.

(4) (a) (i) The plans kept under clauses (a) and (b) of sub-regulation (1) shall also show the settled boundary of the mine, or where the boundary is in dispute, the boundaries claimed by the owner of the mine and by the owners of the mines adjacent to the disputed boundary; Provided that where it is not possible

to show the complete boundary of lease-hold on the same plan, an additional key plan on any other suitable scale showing such boundaries and the outline of the workings shall also be maintained.

(ii) The plans required to be kept under clause (b) of sub-regulation (1) shall also show the workings, both below and belowground, of all adjacent mines as are situated within 200 feet, measured on any plane, of the boundary claimed by the owners of the mine.

(b) The owner, agent and manager of every mine shall give all reasonable facilities to the surveyors of its adjacent mines to carry out the surveys and levellings required to be made under this sub-regulation.

(5) (a) The Regional Inspector may, by an order in writing, require such additional details to be shown on the plans and sections required to be kept under the regulations, or the preparation and maintenance of such other plans and sections showing such details and on such scale and within such time as he may specify.

(b) The Regional Inspector may, by an order in writing, require the owner, agent or manager to submit to him within such time such plans and sections, or tracings thereof, as he may specify.

(c) The owner, agent or manager shall at any time, if required by an Inspector, show on any plan or section the then position of the workings of the mine.

**Regulation 60.** (Copies of plans to be submitted).—The owner, agent or manager shall, on or before the 31st October of every year, submit to the Chief Inspector, two up-to-date copies of the plan maintained under clause (b) of Regulation 59(1). The provisions of this Regulation shall be deemed to have been complied with if the owner, agent or manager gets the copies of plans submitted hereunder during the previous year brought up-to-date at his own expense.

**Regulation 61.** (Plans to be submitted after abandonment or discontinuance).—(1) Where any mine or seam or section thereof is abandoned or the working thereof has been discontinued over a period exceeding 60 days, the person who was the owner of the mine at the time of the abandonment or discontinuance shall, within 30 days after the abandonment or within 90 days after the discontinuance of the workings, as the case may be, submit to the Chief Inspector two true copies of the up-to-date plan and section of the workings of the mine or seam or section maintained under clause (b) of Regulation 59(1). Every such copy shall show the bearing and distance of at least one of the shafts or openings of the mine from a trijunction or revenue pillar or from any other prominent and permanent surface feature, the position of all water-dams built below ground (with their dimensions and other particulars of construction) and also the spot levels at the ends of the workings: Provided that if a change of ownership occurs after the abandonment or discontinuance and before the expiry of the 30 days or the 90 days aforesaid, as the case may be, such plans and sections shall be submitted forthwith.

(2) The original or a certified true copy of the plan and section submitted under sub-regulation (1) shall be kept in the office at the mine.

(3) The Chief Inspector may, on such conditions as he thinks fit to impose, supply copies of a plan or section submitted to him under sub-regulation (1) or such parts thereof as he thinks fit—

- (a) to any person having a bonafide interest in the mine, seam or section; or
- (b) to the owner, agent or manager of an adjacent mine.

Every application for a copy of a plan or section as aforesaid shall be accompanied by a fee of Rs. 50.

**Regulation 62.** (Survey instruments and materials).—The owner or agent shall provide accurate and reliable survey instruments and materials for the proper carrying out of all survey and levelling work and for preparing the plans and sections required under these regulations; and no other instruments or implements shall be used in connection with any such survey or levelling work.

**Regulation 63.** (Listing and storage of plans and instruments).—(1) All plans and sections, and tracings or copies thereof, kept at the mine shall be serially numbered.

(2) Suitable arrangements shall be made at every mine for the proper storage and maintenance of every plan and section and of all instruments and materials. Such arrangements shall provide for flat storage of every plan and section maintained under clause (b) of Regulation 59(1).

(3) Every field book and other notes used in the preparation of plans and sections required under the regulations shall be duly indexed and kept in the office at the mine.

(4) A list of all plans and sections maintained under the regulations and rules and under any orders made thereunder, and tracings or copies thereof, of all survey instruments provided under Regulation 62 and of all field books and other notes kept under sub-regulation (3) shall be kept in a bound paged book kept for the purpose, and brought up-to-date whenever necessary. Every entry in the book shall be signed and dated by the surveyor, and countersigned by the manager.

**Regulation 64.** (Responsibility of surveyors).—(1) Every plan and section, and tracing thereof, prepared under the regulations shall be prepared by or under the personal supervision of a person possessing a Surveyor's Certificate, referred to in these regulations as a 'surveyor'.

(2) Every plan or section, or any part thereof, prepared by or under the supervision of a surveyor shall carry thereon a certificate by him to the effect that the plan or section or part thereof is correct; and shall be signed and dated by the surveyor and countersigned by the manager on every occasion that the plan is brought up-to-date.

(3) Every tracing of a plan or section, or of any part thereof, shall bear a reference to the original plan or section from which it was copied and shall be certified thereon by the surveyor to be a true copy of the original plan or section. The certificate shall be signed and dated.

(4) If the surveyor conceals any part of the workings or allows the plans or sections to be inaccurate, he shall be deemed to be guilty of a breach of these regulations. Nothing in this regulation shall, however, exempt the owner of his responsibility to ensure that every plan or section prepared, kept or submitted under these regulations is correct and maintained up-to-date as required thereunder.

**Regulation 65.** (Plans to be checked on change of ownership or re-opening).—(1) When there is a change in the ownership of a mine, or where a mine or part thereof is reopened, or where in any mine or part thereof, it is intended to start any extraction or reduction of pillars, the owner shall assure himself that the plans and sections of the mine or part are accurate. If any doubt arises as to be accuracy of the plans and sections in any respect, he shall have accurate plans and sections prepared afresh before any drivage or other work of development or of extraction or reduction of pillars is commenced.

(2) If the Regional Inspector is of the opinion that any plan or section prepared, kept or submitted under the regulations is inaccurate, he may, by an order in writing, require a fresh survey made and a new plan or section prepared within such time as he may specify.

(3) If the plan or section required to be prepared under sub-regulation (2) is not prepared within the time specified in the order or to the satisfaction of the Regional Inspector, or the plans or sections are not prepared or brought up-to-date as required under these regulations, he may have the plan or section prepared by any other agency; and the cost thereof, as certified by the Chief Inspector, shall be defrayed by the owner of the mine and recoverable from him as a debt to the Government.

## CHAPTER VII. MEANS OF ACCESS AND EGRESS

**Regulation 66.** (Outlets from a mine).—(1) No person shall be employed, or be permitted to enter or remain for purposes of employment, in any system of workings below ground, unless the system is provided with at least two shafts, inclines or other outlets—

(a) with which every seam or section for the time being at work has a communication so as to afford separate means of ingress and egress to

- (b) which do not have their surface openings in the same building; and
- (c) which are under the sole control of the manager:

Provided that where two systems of workings belowground are interconnected, both of which are not under the control of the same manager, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit either of such systems to be worked with a single shaft, incline or outlet.

(2) Suitable arrangements shall be made for persons to descend and ascend by each of such shafts, inclines or outlets. Where the shaft is more than 100 feet in depth, such arrangements shall be by mechanical means. Every mechanical equipment used for the purpose shall be so installed and maintained as to be constantly available for use. In case of a dispute as to whether any such arrangement is suitable or not, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(3) Such shafts, inclines or outlets shall not be less than 45 feet distant from one another at any point, and each shall be connected with the other by means of a passage not less than 6 feet high and 5 feet wide.

(4) Whenever the connection between two outlets which are required to be maintained under sub-regulation (1) has been obstructed or found dangerous, only such persons as are necessary to clear the obstruction or to repair the dangerous part of the connection or to make a new second outlet, shall be employed belowground until such time as the connection has been re-established or a new second outlet has been provided.

(5) The foregoing provisions of this regulation with respect to shafts, inclines and outlets shall not apply—

- (a) to a shaft which is being sunk or to an incline or outlet which is being made;
- (b) to any working for the purpose of making connection between two or more shafts, inclines or outlets; and
- (c) to any working for the sole purpose of searching for or proving minerals;

So long as not more than 20 persons are employed belowground at any one time in the whole of the different seams in connection with a single shaft, incline or outlet:

Provided that nothing in this sub-regulation shall be deemed to authorise the driving of roads for the development of a seam before a second outlet has been made in accordance with the said provisions.

(6) The Chief Inspector may, by an order in writing and subject to such conditions as he may specify, exempt from the operation of this regulation any mine in the case of which special difficulties exist which in his opinion make compliance with the provisions thereof not reasonably practicable.

**Regulation 67.** (Working shafts).—(1) Every shaft in use or in course of being sunk and every incline or other outlet shall be made and kept secure.

(2) Every shaft regularly used for lowering and raising persons or materials, which is wet, shall be provided with water garlands or other means of collecting and conducting away seepage water.

(3) The top and all landings between the top and bottom of every working shaft and the sump thereof shall, as far as practicable, be kept clear and free from loose materials, tools and debris.

**Regulation 68.** (Fencings and gates at outlets).—(1) Every entrance to a mine from the surface, and the top and all entrances between the top and bottom, including the sump if any, of every working, ventilating or pumping shaft, shall be kept securely fenced.

(2) Every entrance from the surface to the workings belowground, which can be entered on foot, shall be provided with a substantial gate which shall be kept closed and locked when there are no persons belowground. Provided that where such entrance is not used as a means of ingress or egress in or out of the mine, it shall be permanently closed so as to effectively prevent persons from entering therein.

**Regulation 69.** (Outlets from mine parts).—Every part of a mine shall, where practicable, be provided with at least two ways afford of

surface. In case of a dispute as to whether the provision of two such ways is practicable or not, the decision of the Chief Inspector shall be final.

**Regulation 70.** (Periodic examination etc. of outlets).—(1) Every shaft, incline and other outlet provided as required by Regulation 66 shall be examined, once at least in every seven days, by an overman or other competent person. A report of every such examination shall immediately thereafter be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the examination.

(2) If at the time of such examination or at any other time, the shaft, incline and other outlet is found to be not safe, it shall not be used for any purpose whatsoever, until it has been made safe in all respects. Report of every such action taken shall be recorded in the book kept under sub-regulation (1).

## CHAPTER VIII

### TRANSPORTATION OF MEN AND MATERIALS—WINDING IN SHAFTS

**Regulation 71.** (Qualifications of winding enginemen).—(1) No person, other than an official competent for the purpose, shall operate any winding engine unless he has within the preceding five years obtained, from a qualified medical practitioner not below the rank of a Civil Assistant Surgeon, a certificate of general fitness and in particular, to the effect that his powers of eyesight and hearing are such as to enable him to carry out his duties efficiently. All such certificates shall be kept at the office of the mine so long as the holder thereof is so employed.

(2) The Central Government may, by notification in the Official Gazette, direct that, after such date and in such areas as may be specified, no person shall be appointed, or shall continue to work, as a winding engineman unless he holds such qualifications as may be specified.

(3) Notwithstanding anything contained in sub-regulation (1), no person, except an official competent for the purpose, shall be appointed as a winding engineman for lowering and raising persons in a shaft unless he has had experience in winding materials for a period of at least three months.

(4) The name of the winding engineman on duty, together with the period of his shift shall be posted in the winding engine room. Where the Regional Inspector is of the opinion that the duties of any winding engineman are unduly arduous, he may by an order in writing require the period of his shift to be reduced to such period, not less than five hours, as he may specify.

**Regulation 72.** (New winding engines).—(1) When it is intended to bring into use any new winding installation for lowering and raising persons, the owner, agent or manager shall, not less than 60 days before such use, give notice of such intention to the Regional Inspector. The notice shall contain detailed specifications of the installation.

(2) The Regional Inspector may, by an order in writing, require such additions or alterations made to the installation, as he may specify therein.

**Regulation 73.** (Construction and installation of winding equipment).—(1) Every part of a winding installation, including headgear etc. shall be of sound construction and adequate strength, and shall be maintained in safe working order. In case of any dispute as to the foregoing, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) The engine shall be firmly connected to a rigid foundation and shall be so designed, constructed and maintained that with the power provided, the raising and lowering of persons or materials can be carried out with ease, regularity and safety.

(3) Unless otherwise permitted in writing by the Chief Inspector and subject to such conditions as he may specify, every engine for winding shall be so situated in relation to the headgear that the winding rope shall not, in its extreme position, subtend in either direction an angle more than one and a half degrees with the plane of the sheave or pulley used in connection with the rope.

(4) (a) The diameter of the drums or sheaves of the winding engine, and of the pulleys and sheaves used in connection with the winding shall, unless otherwise permitted in writing by the Chief Inspector and subject to such conditions as he may specify, be less than 100 times the diameter of the winding rope.

The grooves of such sheaves or pulleys shall be suited to the diameter of such rope.

(b) Every pulley or sheave used in connection with winding shall while in motion, rotate in a true vertical plane, and shall be maintained in such a condition that slipping is reduced to a minimum.

**Regulation 74.** (Fittings of winding engines).—At every shaft where winding is effected by means of an engine, the following provisions regarding winding engines shall have effect, namely—

(1) There shall be on the drum such flanges, and also if the drum is conical or spiral, such other appliances, as will be sufficient to prevent the rope from slipping or coiling unevenly. Except in 'Koepc' system of winding, the end of the rope shall be securely fixed in such a manner that the rope is not unduly strained. There shall be at least two turns of the rope on the drum when the cage or other means of conveyance is at its lowest point in the shaft.

(2) (a) There shall be provided one or more brakes on the drum-shaft which—

(i) if there are two cages or other means of conveyance, will hold such cages or other means of conveyance when the maximum torque is applied in either direction; or

(ii) if there is only one cage or other means of conveyance, will hold the loaded cage or other means of conveyance in midshaft when the maximum torque is applied downwards.

(b) At least one of the brakes shall be so designed that the brake remains at the 'on' position except when operated.

(c) The brake or brakes shall be arranged to act automatically at all times if the power supply fails.

(d) The brake on the drum shall be used only for the purpose of keeping such drum stationary and not for lowering the cage or other means of conveyance.

(3) Where the winding engine is worked by steam, a screw stop-valve shall not be used as the controlling valve of the engine.

(4) Every engine shall be equipped with a reliable depth-indicator (in addition to any mark on the rope) showing to the winding engineman the position of the cage or other means of conveyance in the shaft, and an automatic device that will ring a bell in the engine room when the ascending cage or other means of conveyance is at a distance of two revolutions of the drum from the top of the shaft. The depth-indicator shall be tested after every adjustment or replacement of the winding rope.

**Regulation 75.** (Shaft fittings).—At every winding shaft, other than a shaft in the course of sinking—to which the provisions of Regulation 79 shall apply—the following provisions shall have effect, namely—

(1) (a) Efficient means shall be provided and maintained for inter-changing distinct and definite signals between the bottom of the shaft and from every landing for the time being in use between the bottom and the top of the shaft. There shall also be efficient means of transmitting distinct and definite signals from the top of the shaft to the winding engineman. All signals shall be transmitted by mechanical or electrical means.

(b) In signalling, the following code of signals shall be used and strictly observed—

ONE RAP—RAISE when engine at rest.

ONE RAP—STOP when engine in motion.

TWO RAPS—LOWER.

THREE RAPS—MEN ready to ascend or descend.

THREE RAPS—IN REPLY—men may enter the cage or other means of conveyance.

(c) Any other signals shall be in addition to, and shall not interfere with, the foregoing.

(d) A printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the top of the shaft and at every such landing and also in the winding engine room.

(e) No person other than the banksman or onsetter shall give any signal unless he is an official of the mine or is authorised in writing by the manager to give signals.

(2) (a) The shaft shall be provided with sufficient number of guides to ensure smooth and safe travel of the cage or other means of conveyance.

(b) Where rope guides are used, the chees-weights or the bottom clamps shall be kept so exposed as to permit regular examination.

(3) Above the topmost landing, 'dogs' or other devices for holding the cage or other means of conveyance in the event of an overwind shall be provided, or the guides, runners or receivers shall be sprung.

(4) (a) At the top of every shaft where cages are used, suitable keps shall be provided and so arranged as to fall in to the 'on' position when the operating lever is released.

(b) At every inset where keps are provided, arrangements shall be made to block the keps securely in the 'off' position; and when in the 'off' position, such keps shall leave the shaft clear for the passage of the cage.

(5) Protective roofing, sufficient to prevent danger from anything falling in the shaft, shall be provided and maintained at the bottom of the shaft. The gap, both vertical and horizontal, between the protective roofing and the top of cage, when the cage is at the bottom of the shaft, shall not exceed six inches.

**Regulation 76 (Manwinding):—**At every shaft, other than a shaft in course of sinking, where a winding engine is used for the purpose of lowering or raising persons, the following provisions shall have effect, namely—

(1) In respect of every part of the winding installation, including pulleys or sheaves, cages, chains, distribution plates and detaching hooks, the following particulars shall be recorded in a bound paged book kept for the purpose—

(a) Name of the manufacturer and the year of manufacture;

(b) Specifications and dimensions;

(c) Reference to any certificates supplied with the part; and

(d) Any other detail that may be necessary or required by an Inspector.

All entries in the book shall be made and signed by the engineer or other competent person, and shall be countersigned and dated by the manager.

(2) In any winding installation, whenever any part or article is replaced or any repaired part or article is used, the fact of such replacement or repair shall be recorded in the book kept under sub-regulation (1).

(3) (a) A single-linked chain shall not be used, except for the shaft coupling chain attached to a cage or other means of conveyance. Such single-linked chain shall be attached to the safety hook through a distribution plate or other approved appliance.

(b) where safety-chains are used, their length shall be such that if the king-bolt breaks, the shock to the cage or other means of conveyance is as slight as possible.

(4) Where drum-clutches are provided the following provisions shall have effect, namely—

(a) Every engine used for the lowering or raising of persons shall have a suitable interlocking device so fitted that it is not possible—

(i) to unclutch any drum unless the brakes of such drum are 'on'; or

(ii) to release the brakes until the drum clutch is fully engaged and securely locked; and

(b) Unless the cage or other means of conveyance attached to the drum is resting at the bottom of the shaft, the drum shall not be unclutched unless the winding engineman has assured himself immediately beforehand that the brake is in full 'on' position.

(5) Except in a system of 'Koepe' winding there shall be provided between the rope and the cage or other means of conveyance a detaching-hook. The space between such detaching-hook, measured from the centre of the hole for attaching it to the rope shackle and the detaching-bell or plate when the cage or other

means of conveyance is at its normal position at the top of the shaft, shall not be less than six feet where a geared engine is used, and not less than 12 feet where a direct-acting engine is used.

(6) In the case of every shaft exceeding 300 feet in depth, the engine shall be fitted with an automatically-recording speed-indicator.

(7) (a) In the case of every shaft exceeding 300 feet in depth, there shall be provided an effective automatic contrivance to prevent over-speeding and overwinding hereinafter called the "Automatic Contrivance". The Automatic Contrivance shall prevent the descending cage from being landed at the pit bottom or other permanent landing at a speed exceeding five feet per second, and shall also control the movement of the ascending cage in such a manner as to prevent danger to persons riding therein. The Regional Inspector may, by an order in writing, specify the maximum speed of winding in any shaft: Provided that increase of any shaft the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the provisions of this sub-regulation.

(b) Tests of every Automatic Contrivance and every brake shall be made by the engineer or a competent person appointed for the purpose, in the following manner—

- (i) once at least in every seven days, by raising each cage or other means of conveyance, in turn, to pass the last control point above the top-most landings; and
- (ii) once at least in every three months, by attempting to land the descending cage at excessive speed. For the purpose of this test, the setting of the Automatic Contrivance may be altered so that a pre-determined point in the shaft is regarded as the landing.

The results of every such test shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the test.

(c) Unless the Automatic Contrivance is in full and fixed engagement with the winding engine, it shall be fully engaged, either automatically or by the winding engineman, whenever persons are to be lowered or raised; and a proper automatic indicator to show that this has been done shall be provided in such a position as to be easily seen by the banksman. No person shall be allowed to enter any cage or other means of conveyance until the indicator shows that the Automatic Contrivance has been fully engaged.

(8) Except where an Automatic Contrivance is provided to prevent overwinding, a point shall be fixed and marked on the indicator of the engine in such a way as to show when the cage or other means of conveyance is at a distance of twice the circumference of the drum from the completion of the wind; and if such cage or other means of conveyance contains persons the winding engineman shall, as soon as it has reached the point aforesaid, not raise it for the remaining distance at a speed exceeding four feet per second.

(9) Where the only means of egress in a mine is by apparatus worked by steam or electricity, precautions shall be taken to ensure that the two winding engines do not fail simultaneously, and in particular in the case of electric winding engines, the engines shall be capable of being connected to two separate power supplies. Unless the Chief Inspector by an order in writing otherwise directs, the provisions of this sub-regulation shall be deemed to be satisfied if an emergency winding gear is maintained.

(10) (a) Every cage or other means of conveyance in which persons ride, shall be—

- (i) covered completely at the top;
- (ii) closed in at the two sides in a manner sufficient to prevent persons or things from projecting beyond the sides;
- (iii) provided with a rigid hand-bar fixed in a position where it can be easily reached by all persons in the cage or conveyance; and
- (iv) provided with suitable gates or other rigid fences such that the gap between the floor of the cage and the lowest part of the gate or fence, or between any two adjacent members of the gate or fence does not exceed six inches. Gates or fences shall not open outwards; and they shall be so fitted and maintained that they cannot be accidentally opened.

(b) The floor of every cage or other means of conveyance shall be strongly constructed and so maintained as to prevent any part of the body of a person riding in the cage or other means of conveyance from projecting beyond the floor.

(11) Not more than such number of persons as may be authorised by the manager shall be allowed to ride in the same cage or other means of conveyance at one time, and a notice specifying the number shall be posted at the top of every shaft and at every inset. The number of persons fixed as aforesaid shall be such as to allow approximately three square feet of floor area per person.

**Regulation 77.** (Multi-decks).—Where a cage has two or more decks which are used simultaneously, each floor at a landing shall be connected by an effective signalling device with the main floor of the landing; and only the banksman or the onsetter, as the case may be, at such main floor shall give the action signal, and only after he has satisfied himself that all cage gates are closed.

**Regulation 78.** (Winding of material).—(1) Every cage used for the raising or lowering of tubs shall be provided with catches or other effective contrivances to prevent the tubs falling out. The cage shall not be set in motion unless the catches or other effective contrivances are in position.

(2) (a) The floor of every cage shall be kept clean; and no skip, bucket or tub shall be filled up to such a height that any of the contents can fall out.

(b) Before long timber, pipes, rails, or other material projecting over the top of the cage or other means of conveyance are lowered or raised, the projecting ends shall be securely fastened to the rope, chains or bow.

(3) (a) No person shall, when ascending or descending a shaft, take with him any bulky material other than tools and instruments except when engaged in repairing the shaft or with the written authority of the manager.

(b) Except as provided in clause (a), no person shall ride in a cage while materials or tubs are being raised or lowered in any of the cages or other means of conveyance.

**Regulation 79.** (Winding in sinking shaft).—At every shaft in course of being sunk, where a winding engine is used, the following provisions shall have effect, namely—

(1) If the shaft exceeds 150 feet in depth, there shall be provided for each bucket or other means of conveyance a detaching-hook. Between the centre of the hole for attaching the detaching-hook to the rope shackle, and the detaching-bell or plate, when the bucket or other means of conveyance is at the top landing, there shall be a clear over-run space of not less than 12 feet. Where the shaft exceeds 500 feet in depth, the bucket when used for lowering or raising persons, shall be provided with sufficient cover overhead for protection from things falling down the shaft.

(2) If the shaft exceeds 500 feet in depth, it shall be provided with sufficient number of guides. Such guides shall be kept extended to within 75 feet of the shaft bottom at all times when sinking is in progress; Provided that the Regional Inspector may, by an order in writing, require the provision of guides in a shaft less than 500 feet in depth.

(3) (a) There shall be provided two separate means of transmitting distinct and definite signals from the bottom of the shaft to the top, and from the top of such shaft to the winding engineman. The signalling appliances shall be examined by a competent person once at least in every 24 hours. The result of every such examination shall be recorded in a bound page book kept for the purpose and shall be signed and dated by the person making the examination.

(b) In signalling, the following code of signals shall be used and strictly observed—

ONE RAP	..	STOP when engine in motion.
ONE RAP	..	STRETCH UP.
ONE RAP	..	RAISE SLOWLY.
TWO RAPS	..	LOWER.
THREE RAPS	..	STRETCH UP when men are riding.

(c) Any other signals shall be in addition to, and shall not interfere with, the foregoing.

(d) A printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the top of the shaft and also in the winding engine room.

(e) Except while riding in a bucket or other means of conveyance, no person other than the chargeman or a person authorised in writing by the manager, shall give any signal.

(4) Every bucket or other means of conveyance in which persons or materials are conveyed, shall be of strong construction and so maintained as to prevent persons or materials from falling.

(5) At top of the shaft or at the landing where the bucket or other means of conveyance is normally landed, suitable doors or covering shall be provided. Except as may be required for the passage of the bucket or other means of conveyance, the doors or covering shall always be kept closed.

(6) Not more than such number of persons as may be authorised by the manager shall be allowed to ride in the bucket or other means of conveyance at one time; and a notice specifying such number shall be posted prominently at the top of the shaft.

(7) When tools, implements or other materials are lowered or raised, the banksman or chargeman, as the case may be, shall see that—

- (a) the bucket is properly loaded;
- (b) materials are not loaded above the rim;
- (c) long timber, pipes, rails, tools or other materials with ends projecting over the rim are securely fastened to the rope, chains or bow; and
- (d) the bucket, before being sent away, is steadied, and the bottom and sides thereof are free from adhering material.

(8) Where guides are provided, the bucket or other means of conveyance shall be raised slowly from the bottom of the shaft, until the rider is picked up.

(9) While persons are at work on any scaffold or platform in the shaft, the following precautions shall be strictly observed—

- (a) The scaffold or platform shall be secured to the sides of the shaft in order to prevent it from swinging.
- (b) The opening for the passage of the bucket or other means of conveyance shall be so protected as to prevent anything falling through it.
- (c) The scaffold or platform shall not be lowered or raised except under the order of the chargeman or other competent person.

**Regulation 80. (Winding ropes etc.).**—At every shaft where a rope is used for winding purposes, the following provisions shall effect, namely—

(1) (a) No rope, bar, link, chain or other attachment to a cage or other means of conveyance shall be used unless it is of good quality and manufacture, is free from any patent defect and is of adequate calculated strength; Provided that the Chief inspector may, by an order in writing, prohibit the use of any rope or type of ropes where in his opinion, such rope is unsafe.

(b) The attachment between the rope and the cage or other means of conveyance shall be of a type and so maintained as to obviate accidental disconnection.

(c) In case of a dispute as to the fitness of any rope, bar, link, chain or other attachment used or intended for use, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) (a) Except in a sinking shaft less than 100 feet depth, every winding rope shall be made of cold drawn steel wire, and the gauge of the wires used in the construction of such rope shall be suited to the diameter of the drums, pulleys and sheaves of the winding installation.

(b) In any shaft, including a shaft in course of sinking, where persons are lowered or raised and where guides are not provided, no rope other than a rope of non-spinning type shall be used.

(c) No rope which has been spliced shall be used for winding purposes.

(d) Unless an exemption in writing has been granted by the Chief Inspector and subject to such conditions as he may specify, no rope, the breaking load of which at any one point therein is less than 10 times the maximum static load on it when the cage or other means of conveyance attached to the end of the rope is at the lowest working point, shall be used or continued in use.

(3) (a) For every rope in use or intended for use, a certificate showing its breaking load, quality, construction and diameter obtained from the manufacturer or supplier and a history of its use, including a record of diameters of the drums, sheaves and pulleys used in conjunction with the rope, shall be kept in a bound paged book kept for the purpose. All entries therein shall be made and signed by the engineer or other competent person, and shall be countersigned and dated by the manager.

(b) If in case of a new rope a test certificate as to the amount of its breaking load is not available, it shall not be used unless a portion thereof, not less than 10 feet in length, has been cut off and tested in a laboratory, institution or test house approved by the Central Government for the purpose.

(4) No winding rope which has been in use for more than three and half years shall be used for winding purposes; Provided that where the Regional Inspector is satisfied that, due to sparing use, any such rope is in good condition even after the expiry of the said period, he may, by an order in writing and subject to such conditions as he may specify, allow the use of such rope for a longer period. Every application for permission to use a rope after the period of three and a half years aforesaid shall be accompanied by a copy of the entries, in respect of the rope, in the book kept for the purpose under sub-regulation (3), and also by a certificate as to the strength of the rope obtained in the manner laid down in clause (b) of that sub-regulation. The certificate aforesaid shall relate to a piece of the rope cut off not more than three months prior to the date of the application:

Provided further that where the Regional Inspector is of the opinion that any rope has become unsafe for use in a shaft before the expiry of the period of three and a half years aforesaid, he may, by an order in writing, prohibit the use of such rope for winding purposes. An appeal against any such order may be preferred to the Chief Inspector whose decision thereon shall be final.

(5) (a) No mode or type of capping shall be used, which fails to withstand a load of at least 10 times the maximum static load thereon.

(b) The cappel of a round rope shall not be attached to the rope by rivets passing through the rope.

(c) In those forms of capping, in which the wircs at the end of the rope are bent back on the rope itself to form a cone, wedges formed by the lapping of soft iron wire shall be placed between the rope and that portion which is bent back. The length of the tapered portion of the socket shall be not less than 12 times the diameter of the rope.

(d) Where white metal is used in the capping of ropes, the tapered portion of the socket shall not be less than eight times the diameter of the rope.

(e) If white metal is used in the capping of ropes—

(i) its melting point shall not exceed 570° Fhr., and its temperature when poured into the socket shall not exceed 685° Fhr.;

(ii) in the length of rope which is to lie within the tapered part of the socket, the fibre core, if any, shall be cut out and the wires shall be untwisted and thoroughly cleaned; and

(iii) the socket shall be heated to a temperature of 212° Fahr. before the white metal is poured into it.

(6) Except in a system of winding which does not permit of the periodical cutting off of pieces of the rope for testing, every rope shall be recapped once at least in every six months, or if necessary, at shorter intervals. Before every such recapping, a length, including the capping, of at least six feet shall be cut off the rope. Each piece of rope so cut off shall be opened and its internal condition examined. The operation shall be carried out under the supervision of the engineer or other competent person, who shall record the date and other particulars thereof in a bound paged book kept for the purpose, and shall sign and date the same.

**Regulation 81. (Suspension gear).—**(1) All parts of suspension gear in regular use shall be renewed after a period of service of not more than seven years, and at shorter intervals if necessary.

(2) (a) All cage chains in general use and all other parts of a suspension gear between the rope and the cage or other means of conveyance, including the detaching-hook, shall be taken apart, cleaned and carefully examined as to wear

and tear (where necessary by gauging) and for rush and cracks, once at least in every three months, or if necessary, at shorter intervals. The various parts shall be annealed or given other proper heat treatment before being refitted: Provided that in the case of such chains or gear manufactured from a steel which is not liable to deterioration necessitating annealing or heat treatment, the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the carrying out of this operation.

(b) Every detaching-bell or plate used in connection with a safety-hook shall be examined, and the opening therein checked by calipers or gauges, once at least in every 30 days.

(c) The operations and examinations required under this sub-regulation shall be carried out by or under the supervision of the engineer or other competent person, who shall record the date and other particulars thereof in a bound paged book kept for the purpose, and shall sign and date the same.

**Regulation 82.** (Precautions after recapping etc.)—After every installation or recapping of a rope and after every renewal or refitting of any suspension gear, the engineer or other competent person shall, after the cages or other means of conveyance fully loaded with materials have made 10 trips up and down the working portion of the shaft, examine the capnel and other parts of the suspension gear to see that they are in proper working order. A report of every such examination shall be recorded in the book kept under Regulation 81(2) and shall be signed and dated by the person making the examination.

**Regulation 83.** (Examination of winding equipment).—(1) It shall be the duty of the engineer or other competent person to examine—

(a) Once at least in every 24 hours—

(i) each winding rope, by passing the rope at a speed not exceeding three feet per second;

(ii) the attachment of the winding rope to the drum, the depth indicator, every part of the suspension gear in the shaft, including cages or other means of conveyance, and every external part of the winding apparatus, upon the proper working of which the safety of persons depends; and

(iii) the brakes of the winding engines;

(b) Once at least in every seven days, the external parts of the winding engine, the guides and the signalling arrangements fitted in a shaft; and

(c) Once at least in every 30 days, each winding rope, by passing the rope at a speed not exceeding 20 inches per second. For the purpose of this examination, the rope shall be cleaned of any encrusted dirt and grease at all places particularly liable to deterioration and at other places, not more than 100 feet apart, throughout the length; and any reduction in the circumference of the rope and the superficial condition of the wires as to wear, corrosion and fracture at every such place shall be noted.

(2) A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination, and countersigned and dated by the engineer and the manager.

(3) If on any examination made as aforesaid, there is discovered any weakness or defect by which the safety of persons may be endangered, such weakness or defect shall be immediately reported in writing to the engineer or other competent person and to the manager; and until such weakness or defect is remedied, the winding installation shall not be used.

**Regulation 84.** (Gates and fences).—(1) At the top of every shaft and at every landing which is in use, there shall be provided suitable gates or fences which shall effectively close the openings into the shaft at all times when a cage or other means of conveyance is not at the top or the landing; provided that every such gate at the top of a shaft shall be self-operating.

(2) (a) At every landing where it is necessary for persons to pass from one side of the shaft to the other, an adequate passby shall be provided for enabling them to do so without entering or crossing the shaft. Every passby so provided shall be not less than 6 feet high and 4 feet wide, and shall be kept clear of all obstructions.

(b) No person shall enter or cross, or be permitted to enter or cross, the exposed space at the bottom of any working shaft except for the purpose of entering or leaving a cage or other means of conveyance or for undertaking an examination, repairs or any other work therein; and no person shall be allowed to work in any such space unless the cages or other means of conveyance, if any, have been stopped and adequate precautions have been taken for the protection of such person.

**Regulation 85.** (Duties of persons riding or working in shafts).—(1) No person shall get on or off a cage or other means of conveyance after the same has been signalled to be set in motion, or leave it until it has reached the appointed stopping place; nor shall any person ride on the top or edge of any cage or other means of conveyance except when engaged in examination, repairs or any other work in the shaft.

(2) Every person, when at or about the top or bottom of a shaft or any landing, shall obey the lawful orders and directions of the banksman or onsetter, as the case may be.

(3) (a) No person shall carry out any examination, repairs or other work in any shaft while winding operations are being carried on; and no winding shall be carried on or permitted while persons are engaged in such examination, repairs or work, except where winding is necessary for the same.

(b) The person in immediate charge of any examination, repairs or work in any shaft shall warn the banksman and the winding engineman that such examination, repairs or work are about to be undertaken.

(c) Every person while engaged in any examination, repairs or other work in a shaft shall be accompanied by at least one other person; and all such persons shall be provided with effective safety belts unless otherwise efficiently protected against the risk of falling.

(d) Every person engaged in carrying out an examination, repair or work in a shaft shall be provided with a protective hat; and shall wear the same when so engaged.

**Regulation 86.** (General precautions).—(1) No unauthorised person shall enter, or be allowed in, a winding engine room.

(2) No adolescent shall descend or ascend a shaft in a cage or other means of conveyance unless accompanied by one or more adults.

## CHAPTER IX

### TRANSPORTATION OF MEN & MATERIALS—HAULAGE

**Regulation 87.** (Haulage roads).—The following provisions shall have effect with respect to every length of road in a mine where materials are transported in tubs by means of gravity or mechanical power, namely:—

(1) Every such road shall—

(a) be of adequate dimensions and, as far as practicable, shall be straight and of regular gradient; and  
 (b) have tracks properly laid with rails of adequate section.

(2) Pulleys, sheaves and rollers that alter the direction of a rope shall be securely fixed.

(3) Where haulage is effected by one or more ropes, there shall be provided and maintained—

(a) at the top of every inclined plane, at least one stopblock or other effective contrivance to arrest tubs from running or moving out of control;

(b) at least one runaway switch or other effective contrivance below the first stopblock or other effective contrivance at a distance greater than the length of a set or train of tubs; Provided that such distance shall not exceed the length of a set or train of tubs by more than 30 feet;

Provided further that where the Regional Inspector so requires, the stop-block and the switch or other effective contrivances aforesaid shall be so intercoupled that they do not remain simultaneously ineffective;

- (c) an attachment, behind an ascending tub or set or train of tubs, of a back stay, drag or other suitable contrivance for preventing the tub, set or train of tubs running back; where an endless rope or chain is used, the provisions of this clause shall be deemed to be satisfied if suitable automatic catches or other effective contrivances are provided at suitable intervals along the track to prevent the ascending tubs running back: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the operation of this clause on grounds that compliance with the provisions thereof is not reasonably practicable;
- (d) safety hooks, jazz-rails or other suitable contrivances to prevent runaway in the forward direction;
- (e) tub re-railers at intervals of not more than 500 feet; and
- (f) on every haulage road exceeding 100 feet in length, effective means of transmitting signals from every stopping place on the road to the place at which the machinery working the rope is operated. All signals shall be transmitted by mechanical or electrical means: Provided that the Regional Inspector may, by an order in writing, require means of transmitting signals in the reverse direction also. In case of any dispute as to whether any means of transmitting signals is effective or not, the decision of the Chief Inspector shall be final.

(4) (a) (i) The following code of signals shall be used and strictly observed—  
**ONE RAP—STOP** when in motion.  
**TWO RAPS—LOWER** or haul in slowly.  
**THREE RAPS—START** when at rest.  
**FOUR RAPS—RAISE** or haul out slowly.

(ii) Any other signals shall be in addition to, and shall not interfere with, the foregoing.

(iii) A printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the place in which the machinery that works the rope is operated and at all regular stopping places along the road.

(iv) No person, other than a competent person or an official, shall give any signal.

(b) At places where signals and safety contrivances are regularly operated, every person operating any such signal or safety contrivance shall be afforded adequate protection against tubs moving out of control.

(c) The engineman or brakeman shall not start the haulage engine until he has received a signal to do so. If the signal is indistinct, he shall not start the engine until it has been repeated and he clearly understands it.

(d) Where electrical signalling is used—

- (i) Adequate precautions shall be taken to prevent signal and telephone wires from touching cables and other electrical apparatus;
- (ii) Signal wires shall be supported on insulators, and shall not be energised at more than 25 volts; and
- (iii) Contact makers shall be so constructed as to prevent the accidental closing of the circuit.

(5) Where in any mine belowground, a system of haulage roads (and conveyors, if any) extend to a distance of more than 1,500 feet from the shaft or the entrance to the mine, efficient telephonic communication shall be provided and maintained between the end of every such system and the bottom and top of the shaft or the entrance to the mine: Provided that where travelling is unduly arduous, the Regional Inspector may, by an order in writing, require the provision and maintenance of telephonic communication in any other case also.

(6) (a) Where any person is allowed to work or pass while the haulage is in motion, manholes for refuge shall be provided at intervals of not more than 30 feet: Provided that where the gradient is less than 1 in 6, such manholes may be provided at intervals of not more than 60 feet.

(b) Manholes shall be not less than 6 feet in height and 4 feet in depth, and not less than  $2\frac{1}{2}$  feet but not more than  $3\frac{1}{2}$  feet in width: Provided that the Regional Inspector may, by an order in writing and subject to such conditions

as he may specify, permit the use as manholes of cross roads other than haulage roads, of dimensions larger than aforesaid.

(c) Every manhole shall be kept clean and clear of obstruction, and white-washed both inside and for a distance of not less than one foot around the aperture.

(d) As far as practicable, all manholes shall be provided on one side of the haulage road.

(e) In case where there are serious practical difficulties in providing manholes as specified in clauses (a) and (b), the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit manholes to be at greater intervals or of other dimensions.

(f) Except where haulage is effected by means of an endless rope or chain, whenever the haulage rope is in motion, every person on the haulage road shall take shelter in a manhole.

(7) The manager shall, by an order in writing, in respect of every haulage road, fix the maximum number of tubs, according as to whether they are loaded or not loaded, that may be coupled together to run as a set or train. A notice specifying the number of tubs so fixed shall be posted prominently at the top and at all regular stopping places of the haulage road.

(8) (a) As far as practicable, tubs shall not be coupled or uncoupled on a gradient.

(b) At all places where tubs are coupled or uncoupled, there shall be a clear space of not less than 3 feet—

(i) between the tubs and one side of the road; and

(ii) where there are two or more tracks, also between the adjacent tracks.

(9) (a) When any road or face is in direct line with a haulage track and persons may be exposed to danger from runaway tubs, a strong buffer or other effective contrivance to prevent such danger shall be provided and maintained.

(b) A stopblock or other effective contrivance shall be provided near the entrance of every tramming road branching off the main haulage road, and on every track which slopes towards the shaft.

**Regulation 88.** (Travelling roads).—(1) Except when an exemption in writing has been granted by the Regional Inspector, travelling roads, separate from haulage roads on which haulage is effected by mechanical means or gravity, shall be provided for persons to travel to and from their working places.

(2) Every such travelling road shall—

(a) be not less than six feet high throughout;

(b) where the inclination exceeds 30 degrees from the horizontal, be provided with suitable steps or ladders;

(c) where the inclination exceeds 45 degrees from the horizontal, be provided, in addition to steps or ladders, with hand rails or ropes so as to ensure safe travel; and

(d) where the inclination exceeds 60 degrees from the horizontal, be provided, in addition to the steps or ladders and hand rails or ropes, with suitable platforms at intervals not exceeding 30 feet measured along the slope.

(3) Except for purposes of inspection, examination or repairs, every person other than an official or a haulage attendant shall travel by the travelling road.

(4) Where persons using a travelling road have to cross a conveyor, a suitable cross-over bridge shall be provided.

(5) No haulage shall be used for the general conveyance of persons except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

**Regulation 89.** (Tubs and their movement).—(1) (a) On every tub there shall be provided and maintained at each coupling end, a strong buffer projecting beyond the end and so arranged that when two such tubs are in tandem, the gap between the innermost ends shall not be less than eight inches.

(b) On every side-tipping tub in use, safety-catches shall be provided to prevent accidental tipping. No tub or set or train of tubs shall be set in motion unless all the safety-catches are properly secured.

(c) The attachment between a rope or locomotive and a tub or set or train of tubs, and the attachment between any two tubs in a set or train, shall be of a type and so maintained as to obviate accidental disconnection.

(d) The state of every buffer and drawbar of every tub in use and of every safety-catch, coupling-chain and other attachment shall be examined, one at least every seven days, by a competent person appointed for the purpose. A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

(2) (a) When tubs are about to be moved, persons likely to be endangered shall be warned.

(b) Two or more tubs shall not be moved by hand in close succession but shall be coupled and moved together. Two tubs shall be deemed to be in close succession when the distance between them at any time is less than 50 feet.

(c) No person shall cause or permit a tub to run uncontrolled except with the written permission of the manager: Provided that the Regional Inspector may, by an order in writing, prohibit the uncontrolled movement of tubs at any place if he is of the opinion that such movement is likely to cause danger.

(d) No person while taking a tub down a gradient exceeding 1 in 20 shall go in front of the tub; and in every case where the conditions are such that a person cannot control the tub from behind, he shall not take the tub down unless sprags or other suitable contrivances are used to control it.

(e) Where required for use, a sufficient number of sprags of suitable material and dimensions shall be provided.

(f) Every tub while standing on a track having a gradient of more than 1 in 20, unless held effectively by brakes or securely coupled to a haulage rope or locomotive, shall be effectively blocked, chained or otherwise secured.

(g) As far as possible, coupling and uncoupling of tubs shall be done only when the tub or set of the tubs, and the rope if connected to the set, is not in motion.

(3) No person shall ride on any tub or haulage rope except with the written authority of the manager. A list of all persons so authorised shall be maintained.

**Regulation 90.** (Brakes of haulage engines).—(1) Every haulage engine shall be provided with an effective brake.

(2) Whenever the haulage engineman has occasion to leave the engine, he shall cut off the power and secure the engine with the brake.

**Regulation 91.** (Haulage ropes).—(1) No rope shall be used for purpose of haulage if a strand thereof is missing over any length.

(2) Every rope which is capped shall be recapped once at least in every six months, or if necessary, at shorter intervals, under the supervision of a competent person.

(3) For every haulage rope in use, a record of size, construction, quality, name of supplier and dates of installation and of recapping, shall be kept in a bound paged book kept for the purpose; and all entries therein shall be made by the engineer or other competent person.

**Regulation 92.** (Examination of haulage engines).—(1) It shall be the duty of a competent person to examine carefully—

(a) once at least in every 24 hours, every haulage engine, brake-wheel, ropes and other appliances in use; and

(b) once at least in every seven days, every track where the haulage is effected by means of gravity or mechanical power, and every safety contrivance fitted thereon.

(2) A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

**Regulation 93.** (Examination of haulage and travelling roads).—It shall be the duty of the overman or other competent person to examine carefully, once at least in every seven days, the state of all haulage and travelling roads, including roads leading to all the outlets of the mine which are in use. A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

**Regulation 94.** (Signals on conveyor roads).—On every length of road in which a conveyor is installed for transporting loads over a distance exceeding 100 feet, there shall be provided and maintained effective means of transmitting signals from every point on the length of the road to the place at which the machinery working the conveyor is operated: Provided that the Regional Inspector may, by an order in writing, require means of transmitting signals in the reverse direction also.

**Regulation 95.** (Locomotives).—(1) No locomotive shall be used below ground otherwise than in accordance with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(2) No locomotive shall be used where the gradient exceeds 1 in 15.

(3) No person other than the driver shall ride on any locomotive unless authorised in writing to do so by the manager.

(4) Except during shunting operations, the locomotive shall lead the tubs or set or train of tubs.

**Regulation 96.** (Movement of wagons).—(1) No woman or adolescent shall be employed in moving railway wagons.

(2) The movement of railway wagons shall be carried on under the supervision of a competent male person.

(3) No person shall push a wagon or set of wagons except from behind, or move or attempt to move a wagon by pushing at the buffer.

(4) Where two or more wagons are moved simultaneously, the wagons shall be coupled together; and the number shall not exceed the number which can be effectively controlled. Before wagons are moved, persons likely to be endangered shall be warned by the competent person.

(5) No locomotive or wagon shall be moved when the natural light is insufficient, unless the approaching end is distinguished by a suitable light or is accompanied by a person carrying a lamp.

(6) No person, other than the competent person appointed under sub-regulation (2), shall pass immediately in front of wagons moving under bins or screens, nor between moving wagons and the under-structure of the bins or screens.

(7) No person shall be upon the buffer of a locomotive or wagon in motion unless there is a secure handhold, and shall not stand thereon unless there is also a secure footplace. No person shall pass over the couplings between any two wagons while the wagons are moving.

(8) No person shall cross a line of rails by crawling or passing underneath a train or wagon, nor shall a person sit or sleep underneath a wagon.

(9) Wherever railway-wagons are specially placed so as to afford a thoroughfare, such thoroughfare shall be at least 15 feet in width.

(10) No material shall be placed or dumped within four feet from either side of a track of rails.

(11) All space between the rails at switches and crossings, in which the foot of a person is liable to be caught, shall, where possible, be kept filled with concrete, tar, asphalt, or wooden blocks.

**Regulation 97.** (Fencings and gates).—(1) Where any haulage road or tramline passes over a public road, suitable gates shall be provided to prevent danger to public from a moving tub, set or train of tubs or locomotive. Every such gate shall be fitted with a danger signal, and when the natural light is insufficient, also with warning lamps.

(2) Where occupied buildings are situated within 50 feet of any haulage road or tramline, a substantial fence shall be provided and maintained between such buildings and the haulage road or tramline.

## CHAPTER X

## MINE WORKINGS

**Regulation 98.** (Opencast workings).—In opencast workings, the following precautions shall be observed, namely—

(1) In alluvial soil, morum, gravel, clay, debris or other similar ground—

(a) (i) the sides shall be sloped at an angle of safety not exceeding 45 degrees from the horizontal or such other angle as the Regional Inspector may permit by an order in writing and subject to such conditions as he may specify therein; or

(ii) the sides shall be kept stepped, and the height of any step shall not exceed 5 feet and the breadth thereof shall not be less than the height: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, exempt from the operation of this clause any working in the case of which special difficulties exist, which in his opinion make compliance with the provisions thereof not reasonably practicable; and

(b) where any pillar is left 'in situ' for the purpose of measurement, its height shall not exceed 8 feet; and where the height of such pillar exceeds 4 feet, the base of the pillar shall not be less than 5 feet in diameter.

(2) In an excavation in any hard and compact ground or in prospecting trenches or pits, the sides shall be adequately stepped, sloped or secured so as to prevent danger from falls of material.

(3) In coal, the sides shall either be kept sloped at an angle of safety not exceeding 45 degrees from the horizontal, or the sides shall be kept stepped and the height of any step shall not exceed 10 feet and the breadth thereof shall not be less than the height: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, exempt from the operation of this sub-regulation any working in the case of which special difficulties exist which in his opinion make compliance with the provisions thereof not reasonably practicable.

(4) No tree, loose stone or debris shall be allowed to remain within a distance of 10 feet from the edge or side of the excavation.

(5) No person shall undercut any face or side, or cause or permit such undercutting as to cause any overhanging.

(6) No person shall work or travel over any face or side having an inclination exceeding 45 degrees from the horizontal or on any ledge or footpath less than 5 feet wide, from which he will be likely to fall more than six feet, unless he is protected by guard rails, fence or rope suitably fixed and sufficiently strong to prevent him from falling.

(7) (a) No person shall carry or be permitted to carry any load along a road or footpath having an inclination of 30 degrees or more from the horizontal.

(b) Every road or footpath, along which loads are carried by human agency, shall comply with the following requirements:—

(i) its breadth shall not be less than three feet; and

(ii) at every place where the inclination exceeds 15 degrees from the horizontal, level steps shall be provided such that the vertical height of every step does not exceed seven inches and the distance from the edge to the back is not less than 14 inches.

**Explanation.**—Gang-planks used for loading wagons shall not be deemed to be part of a footpath for the purposes of this sub-regulation, provided that every gang-plank shall be so inclined or constructed as to give a secure foot-hold.

(8) (a) No woman or adolescent shall be employed to lift, carry or move a load so heavy as is likely to cause bodily injury or injury to health to that woman or adolescent. In case of any dispute as to whether risk of bodily injury or injury to health is involved, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(b) In no case shall the maximum load that may be carried by any such person over his or her body exceed 50 pounds.

**Regulation 99.** (Development work).—(1) The dimensions of pillars and galleries, and the shape of pillars, formed in any seam or section shall be such as to ensure stability during the formation and extraction of pillars, and during the period between such formation and extraction.

(2) Save with the previous permission in writing of the Regional Inspector, no gallery in a seam or section shall exceed 10 feet in height or 16 feet in width at any place.

(3) The pillars formed in any seam or section shall normally be rectangular in shape.

(4) The distance between the centres of any two adjacent pillars left in a seam or section shall not be less than that specified in the appended table as corresponding to the depth of the seam or section from the surface at that point and the width of the galleries in the workings in question:

Depth of seam from surface	Where the width of the galleries does not exceed 10 feet	Where the width of the galleries does not exceed 12 feet	Where the width of the galleries does not exceed 14 feet	Where the width of the galleries does not exceed 16 feet
	the distance between centres of adjacent pillars shall not be less than			
I	2	3	4	5
	Feet	Feet	Feet	Feet
Not exceeding 200 feet.	40	50	60	65
Exceeding 200, but not exceeding 300 feet.	45	55	65	70
Exceeding 300, but not exceeding 500 feet.	55	65	75	85
Exceeding 500, but not exceeding 800 feet.	75	85	100	115
Exceeding 800, but not exceeding 1200 feet.	95	115	130	150
Exceeding 1200 feet.	130	140	150	150

(5) Nothing in sub-regulations (2), (3) and (4) shall apply to workings in a mine made before 7th September, 1926. In such workings, the following provisions shall apply, except during the extraction or reduction of pillars—

(a) If the distance between the centres of adjacent pillars are smaller than those specified in the table appended to sub-regulation (4), the pillars shall not be further reduced; or

(b) If the distance between the centres of adjacent pillars are not smaller than those specified in the table appended to sub-regulation (4), the pillar shall not be so reduced as to render these distances smaller than—

(i) the distance so specified, or

(ii) any distance required in this behalf by the Regional Inspector; and

(c) The height and width of the galleries shall not be further increased without the permission in writing of the Regional Inspector.

(6) In the case of all workings, where in the opinion of the Regional Inspector the dimensions of pillars or galleries are such as to render it likely that crushing of pillars or the premature collapse of any part of the workings will occur either before or during the extraction of pillars, he may, by an order in writing, require such modification of the dimensions aforesaid in respect of any future working as he may specify.

**Regulation 100.** (Depillaring operations).—(1) No extraction or reduction of pillars shall be commenced except with the permission in writing of the Chief Inspector; and no such extraction or reduction shall be carried out except in accordance with such conditions as he may specify. Any application for permission under this sub-regulation shall be accompanied by two copies of an up-to-date plan of the area where pillars are proposed to be reduced or extracted, showing the proposed extent of extraction or reduction of pillars, the manner in which such extraction or reduction is to be carried out, the thickness and depth of the seam, the nature of the roof, and the rate and direction of dip.

(2) The extraction or reduction of pillars shall be conducted in such a way as to prevent, as far as possible, the extension of a collapse or subsidence of the goaf over pillars which have not been extracted.

(3) (a) Save as provided by clause (b), no pillars shall be reduced or split in such a manner as to reduce the dimensions of the resultant pillars below those required by Regulation 99 or by any order made thereunder, nor shall any gallery be so heightened as to exceed 10 feet.

(b) During the extraction of pillars, no splitting or reduction of pillars or heightening of galleries shall be effected for a distance greater than the length of two pillars ahead of the pillar that is being extracted or reduced: Provided that where pillar extraction is about to begin in a district, such splitting or reduction of pillars or the heightening of galleries shall be restricted to a maximum of four pillars. The width of the split-galleries shall not exceed the width prescribed for galleries under Regulation 99(4).

(c) The Regional Inspector may, by an order in writing, relax or restrict the provisions of this sub-regulation in respect of any specified workings to such extent and on such conditions as he may specify.

(4) No extraction of pillars in any seam or section shall be commenced until fire-dams or stoppings have been provided in all openings, other than openings essential for ventilation and haulage, around the area to be extracted; and in the roads kept open for ventilation or haulage, foundations for such dams or stoppings shall be prepared, and bricks and other suitable materials shall be kept readily available in their vicinity: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, exempt from the operation of this sub-regulation any part of a mine where special difficulties exist, which in his opinion make compliance with the provisions thereof not reasonably practicable.

(5) Where the method of extraction is to remove all the coal or as much as of the coal as practicable and to allow the roof to cave in, the operations shall be conducted in such a way as to leave as small an area of uncollapsed roof as possible. Where possible, suitable means shall be adopted to bring down the goaf at regular intervals.

(6) Where the voids formed as a result of extraction are stowed with sand or other materials, the owner, agent or manager shall, on or before the 10th day of every month, submit to the Regional Inspector a statement giving the quantity of coal raised and the quantity of sand or other material stowed in each district during the preceding month.

**Regulation 101.** (Saving clause).—Nothing in Regulation 99 or Regulation 100 shall prevent the driving of any gallery through any pillar or the enlargement of any gallery beyond the limits specified by or under these regulations, where in the opinion of the manager such work is necessary for haulage, ventilation, drainage or any other purposes necessary for the proper working of the mine, if 14 days' previous notice of the intention to commence such work has been given to the Regional Inspector. Every such notice shall be accompanied by an offset plan showing details of the operation. If in the opinion of the Regional Inspector, such work is likely to endanger the stability of the workings, he may by an order in writing, require the completion, before commencing such drivage or enlargement, of such protective works as he may specify.

**Regulation 102.** (Roads and working places).—(1) The roof and sides of all working places and travelling roads, including airways and travelling roads to second outlets, shall be made and kept secure.

(2) Proper provision shall be made to prevent the premature collapse of workings; and adequate steps shall be taken to isolate, control or remedy any such collapse which may occur.

(3) Whenever "crush" of pillars or any symptom of an impending collapse other than ordinarily caused by pillar extraction is detected, the manager shall inform the Regional Inspector forthwith.

**Regulation 103.** (Powers of Inspectors).—If in any mine or part thereof, it appears to the Regional Inspector that the provisions of regulations 98, 99, 100 and 102 or of any order issued under any of these regulations have not been complied with, he may give notice in writing to the owner, agent or manager requiring him to take such protective measures, within such time, as he may specify in the notice. In case of non-compliance with the requirements of the notice, the Regional Inspector may, by an order in writing, prohibit the extraction of coal in the part or parts of the mine in which protective measures are required to be taken, until the requirements specified in the notice are complied with to his satisfaction.

**Regulation 104.** (Multi-section and contiguous workings).—(1) No work in a higher seam or section shall be done over an area in a lower seam or section which may collapse.

(2) (a) No workings shall be made in more than one section in any seam, nor shall workings be made in any two seams lying within 30 feet of each other, without the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(b) Every application for permission under this sub-regulation shall be accompanied by two copies of a plan showing the proposed layout of the workings, a section of the seam or seams, the depth of the seam(s) from the surface, the rate and direction of dip, the proposed dimensions of pillars and galleries in each seam or section, and the thickness of the parting between the seams or sections.

(c) Where two or more such seams or sections are worked in a mine, the pillars in one seam or section shall, as far as practicable, be vertically above or below the pillars in the other seam or section unless the strata are inclined at an angle of more than 30 degrees from the horizontal.

(d) The parting left between any two such seams or sections shall not be less than 10 feet in thickness at any place: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit or require a smaller or greater thickness of parting, as the case may be.

**Regulation 105.** (Workings under railways and roads etc.).—(1) No workings shall be made and no work of extraction or reduction of pillars shall be conducted at, or extended to, any point within 150 feet of any railway subject to the provisions of the Indian Railways Act, 1890, or of any public works in respect of which this regulation is applicable by reason of any general or special order of the Central Government, or of any public road or building, or of other permanent structure not belonging to the owner of the mine, without the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(2) Every application for permission under sub-regulation (1) shall specify the position of the workings of the mine in relation to the railway or public road or works or buildings or structure concerned, the manner in which it is proposed to carry out the intended operations, and the limits to which it is proposed to carry out the said operations; and shall be accompanied by two copies of a plan showing the existing and the intended mining operations in so far as they effect the railway or public road or works or building or structure concerned. A copy of the application shall also be sent in the case of a railway, to the Railway administration concerned; and in the case of any public works as aforesaid, to such authority as the Central Government may by general or special order direct.

(3) Notwithstanding anything contained in the regulations, the stability of such railways, roads, buildings or structures shall not be endangered until they have been dismantled, diverted or vacated, as the case may be.

(4) Where the stability of such railways, roads, buildings or structures has been endangered, the Chief Inspector may have protective works executed by any other agency, and the cost thereof, as certified by the Chief Inspector, shall be defrayed by the owner of the mine and recoverable from him as a debt to the Government.

**Regulation 106.** (Protective works before a mine is closed).—(1) The Chief Inspector may, by an order in writing, require the owner of any mine to which Regulation 6 applies, to construct below ground in the mine or on the surface such protective works within such time as he may specify therein.

(2) If the owner fails to construct such protective works within the time specified in the order, the Chief Inspector may have the works executed by any other agency, and the cost thereof as certified by the Chief Inspector shall be defrayed by the owner of the mine and recoverable from him as a debt to Government.

(3) Until the protective works have been constructed to the satisfaction of the Chief Inspector, the means of entering the mine, at least two entrances, shall be kept in tact and in working order.

**Regulation 107.** (Workings near mine-boundaries).—(1) No working shall be made within a distance of 25 feet of the boundary of any mine property: Provided that in the case of a disputed boundary, no working shall be made within a distance of 25 feet of the boundary claimed by the owner of an adjacent mine until such time as a binding agreement has been reached as to the correct boundary or the question has been finally determined by a court of law.

(2) Notwithstanding anything contained in sub-regulation (1), the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit the workings of any mine or part thereof to extend to within any shorter distance than 25 feet aforesaid, or may require that the said workings shall not extend further than a specified distance, not exceeding 200 feet, of such boundary.

**Regulation 108.** (Systematic Timbering Rules).—(1) The provisions of this regulation with respect to systematic timbering shall apply to—

- (a) Every district in a mine in which extraction or reduction of pillars is going on;
- (b) Every "longwall" working;
- (c) Every working in a disturbed or crushed ground; and
- (d) Any mine or part of a mine where, in the opinion of an Inspector, the roof or side is of such a nature as to require artificial support.

(2) The manager shall, before commencing any operations specified in clauses (a), (b) and (c) of sub-regulation (1) or at any time when required by an Inspector for the purpose of securing the roof and sides of the workings, frame Systematic Timbering Rules in the form specified in Third Schedule, and submit a copy thereof to the Regional Inspector who may approve of them either in the form submitted to him or with such additions or alterations as he may think fit. The systematic Timbering Rules so approved shall not be altered without the permission in writing of the Regional Inspector.

(3) The manager shall hand over copies of the Systematic Timbering Rules so approved to all the supervising officials concerned, and shall also post such copies at conspicuous places in the mine.

(4) The manager and such supervising officials shall be responsible for securing effective compliance with the provisions of the Systematic Timbering Rules, and no mine or part of a mine shall be worked in contravention thereof.

**Regulation 109.** (Setting of Supports).—(1) Every prop or bar used as a support shall be set securely and on a secure foundation; and whenever it becomes loose or broken shall, as soon as possible, be tightened or replaced.

(2) Every cog used as a support shall be well built on the natural floor or on a secure foundation, and shall be made and kept tight against the roof. Only rectangular pieces of material shall be used as members of a cog, so however, that in case of timber it shall be sufficient to saw two opposite sides to provide plain surfaces.

(3) The walls of every pack used for the purpose of support shall be well built on the natural floor; and the pack shall be filled with debris or other suitable incombustible material and made as tight against the roof as practicable, over its whole area.

(4) Where sand or other material is stowed for the purpose of support, it shall be packed tight against the roof.

(5) Any timber support dislodged by, or deliberately removed for, any operation shall be replaced with the least possible delay.

(6) In every working place or travelling road, wherein a fall of roof or sides involving the displacement or breakage of supports has occurred, no work of clearing the fall shall be undertaken until the newly exposed roof or side has been examined and made safe—if necessary, by temporary supports.

**Regulation 110 (withdrawal of supports).**—Whenever props, bars or cogs, set as supports are to be withdrawn, a safety prop-withdrawer or other suitable contrivance shall be used.

**Regulation 111. (Steel workings).**—In workings having an inclination of 30 degrees or more from the horizontal, adequate precautions shall be taken to prevent danger to persons from falling or rolling of timber, tools or other appliances or material.

**Regulation 112. (Fencings and gates).**—(1) (a) The top of every opencast working shall be kept securely fenced.

(b) Where an excavation which has been formed as a result of any mining operation, extends within a distance of 50 feet from a public road or any building, substantial fencing shall be erected and maintained around the excavation.

(c) Where as a result of mining operations, a subsidence of the surface has taken place or is likely to take place and persons are likely to be endangered thereby, the owner, agent or manager shall keep the entire surface area securely and effectively fenced.

(2) Every entrance to a shaft, staple pit, sump, goaf or other dangerous place shall be provided with an efficient fence, barrier or gate, so designed and constructed as to effectively prevent any person from entering or falling therein.

(3) Where a shaft or staple pit or a gallery having an inclination of more than 30 degrees from the horizontal leads directly into a travelling road, such road and any working place situated on its dip side, shall be securely fenced off or otherwise protected as to prevent danger to persons from falling materials.

(4) Every entrance from a road in a mine to a part of the mine which, for the time being, is neither being worked nor being used for any purpose, by reason of any cause whatsoever, shall be provided with an efficient fence, barrier or gate so designed and constructed as to effectively prevent any person from entering that part of the mine.

(5) (a) Shafts and opencast workings temporarily or permanently out of use and any place in or about an excavation which is dangerous shall be kept securely fenced.

(b) If in the opinion of the Regional Inspector, any disused trench, pit or other excavation is dangerous, he may, by an order in writing, require the same to be filled in to the level of the adjacent ground.

(c) Before a mine is abandoned or the working thereof discontinued, the owner, agent or manager shall cause the top or entrance of every shaft, incline or other opening into the mine to be fenced by a structure of a permanent character sufficient to effectively prevent persons falling into or entering the same.

**Regulation 113. (Examination by sirdars).**—(1) Every place in a mine whether belowground or in opencast workings, including travelling roads and landings, where work is carried on or where persons are stationed or required to pass shall be placed under the charge of a sirdar or other competent person.

(2) The mine or district assigned to a competent person shall not be of such a size, nor shall any additional duties other than his duties under the regulations be such, as to be likely to prevent him from carrying out in a thorough manner the duties prescribed for him under the regulations. In case of a dispute as to the foregoing, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(3) (a) At the entrance to every mine or district, one or more stations shall be fixed by the manager; and no person other than an official shall pass beyond any such station until all the roads and working places to which such persons are required to have access, have been examined by the competent person in charge of the mine or district and found to be satisfactorily ventilated and in safe condition. Every such station shall be legibly marked 'STATION' and shall be of such a size as to accommodate all the persons employed in the district.

(b) The competent person shall, within two hours before the commencement of work in a shift, inspect every part of the mine or district assigned to him, in which persons have to work or pass during the shift, and all roads and working places where work is temporarily stopped; and shall ascertain the condition thereof as regards ventilation, sanitation, the presence of gases, the state of the roof and sides, and generally so far as the safety of the persons is concerned: Provided that in the case of a mine to which Regulations 122(2) and 144 apply, such inspection shall be made with an approved flame safety lamp;

Provided further that in the case of a district to which Regulation 122(2) applies, a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector shall also be carried during every such inspection.

(c) Similar inspections shall be made once at least in every four hours during which the shift continues, of all the roads and other working places to which persons engaged in the mine or district are required to have access. Where the mine is worked by a succession of shifts, the competent person being relieved shall meet the person taking over charge from him in the district and shall acquaint him with all matters requiring his personal attention.

(d) The competent person shall, at the completion of his shift, record without delay the result of his inspections in a bound paged book kept for the purpose. Every such report shall be a full and accurate report of the inspections and shall include the following—

- (i) the details referred to in clause (b);
- (ii) the number of persons working under his charge;
- (iii) such instructions for the purposes of securing the safety of the persons as the competent person may have given during his shift; and
- (iv) the date and time of the inspections, the signature of the competent person, and the date and time when the report was written.

(4) In the case of a shaft in the course of being sunk, the competent person or chargeman shall—

- (a) have entire charge of the shaft bottom and shall remain there during the whole of his shift; he shall be the last person to ascend the shaft at the end of the shift; and if his shift is succeeded immediately by another shift, he shall not leave the bottom of the shaft until after the descent of the chargeman of the succeeding shaft; and
- (b) after each round of shots, and at the beginning of every shift, and after every cessation of work in the shaft for a period exceeding two hours, shall examine the sides of the shaft and remove all loose pieces before persons are allowed to descend.

**Regulation 114. (Occurrence of dangers).**—(1) If at any time it is found by a competent person in charge of a mine or district, that by reason of any cause whatsoever, the mine or district is dangerous, he shall immediately withdraw all persons from the mine or district; and the mine or district shall be fenced off so as to effectively prevent persons entering therein.

(2) The competent person shall also immediately inform the manager about the danger, and shall record the fact in the book kept under sub-regulation (3).

(3) The manager shall make, or cause to be made by a competent person a careful examination of the mine or district; and no person shall, except in so far as is necessary for enquiring into the cause of the danger or for the removal thereof or for exploration, be re-admitted into the mine or district until the mine or district is reported to be safe. A report of every such examination shall be recorded without delay in a bound paged book kept for the purpose and shall be signed and dated by the person who made the examination.

(4) If any cessation of work takes place in the mine or district before the danger is removed, the mine or district shall be securely fenced off so as to effectively prevent persons entering therein.

(5) Notwithstanding anything contained in the regulations—

(a) where the danger arises from the presence of inflammable or noxious gas, the provisions of Regulation 142 shall apply; and

(b) where the appearance in any part of a mine of smoke or other sign indicates that a fire or spontaneous heating has or may have broken out, the provisions of Regulation 119 shall apply.

**Regulation 115.** (General precautions).—(1) Every person shall carefully examine his working place before commencing work and also at intervals during the shift. If any dangerous condition is observed, he shall cease all work at that place and shall either take immediate steps to remove such danger or inform an official or the competent person in charge of the mine or district. Where several persons are working together and one of them is in charge, the examination required by this sub-regulation shall be made by the person in charge.

(2) Every person cutting coal and every person operating a coal-cutting machine in a place to which Regulation 99 applies shall see that the dimensions of that place do not exceed the dimensions specified by that regulation.

(3) No person shall cut or remove coal from or in the vicinity of any place unless it is his authorised working place.

(4) No person shall work or be permitted to work at any place having an inclination of 45 degrees or more from the horizontal, where he is liable to slip or overbalance; unless he is secured by a safety belt or life line or is otherwise safeguarded.

(5) No person shall work or be permitted to work alone in any remote part of a mine where, if any accident occurred, he would not soon be discovered or assisted.

(6) No inexperienced person shall be employed at the coal face or for other work whereby he or other persons can be seriously endangered, except under the supervision and guidance of an experienced person.

(7) Except in an emergency, no person other than an official shall remain in a mine beyond the period over which his shift extends.

## CHAPTER XI

### PRECAUTIONS AGAINST DANGERS FROM FIRE, DUST, GAS AND WATER

**Regulation 116.** (General precautions against fire).—(1) No oil, grease, canvas or other inflammable material shall be stored in any mine except in a fire-proof receptacle. In case of workings below ground, greasy or oily waste shall be regularly removed to the surface.

(2) No person shall place or throw, or cause or permit to be placed or thrown, any naked light or lamp on or near any timber, wooden structure, or other combustible material.

**Regulation 117.** (Surface precautions against fire).—(1) All surface structures and supports within a horizontal distance of 25 feet from all entrances to a mine shall be of fire-proof material: Provided that this sub-regulation shall not apply to temporary structures, support and coverings at the top of shafts which are in the course of being sunk and to the small lid or covering of a shaft—covering operated by the rope couple.

(2) Combustible materials other than materials required for use within a period of 24 hours, and inflammable materials, shall not be stored within a distance of 50 feet from any entrance to a mine, which is not effectively sealed off from the workings below ground: Provided that nothing in this sub-regulation shall prevent the dumping of coal, raised from the mine, near the entrance to the mine.

(3) Shale or other carbonaceous materials shall not be heaped or dumped, and dead leaves or dry vegetation shall not be allowed to accumulate or remain, within a distance of 50 feet from any entrance to a mine: Provided that nothing in this

sub-regulation shall prevent the dumping of coal, raised from the mine, near the entrance to the mine.

(4) In opencast workings and in any ground broken by extraction of coal, all wild or herbaceous plants shall be removed and all dry leaves cleared as often as may be necessary to prevent an outbreak of fire.

(5) No person shall deposit any heated material or ashes on any outcrop of coal or in any opencast working or on any ground broken by extraction of coal.

(6) A competent person shall, once at least in every seven days, inspect the top of all entrances to a mine, all opencast workings and any ground broken by extraction of coal in order to ascertain whether the precautions laid down in sub-regulations (3) and (4) have been complied with, and for the presence of any fire that may have broken out or any indications thereof. A record of every such inspection shall be maintained in a bound paged book kept for the purpose, and shall be signed and dated by the person making the inspection.

(7) No person shall light a fire or permit a fire to be lighted in any opencast working or within a distance of 50 feet from any entrance to a mine, except by an order in writing of the manager and only for a special purpose specified in such order. All such orders shall be recorded in a bound paged book kept for the purpose: Provided that this sub-regulation shall not apply to boilers other than vertical boilers.

**Regulation 118** (Underground precautions against fire).—(1) No timber or other combustible material shall be used in the construction of, or in connection with, any room housing any machinery or apparatus belowground.

(2) No person shall light a fire or permit a fire to be lighted in any workings belowground: Provided that in the case of a mine where the provisions of Regulation 144 apply, a flame or electric welding or repairing apparatus may be used belowground if prior permission in writing has been obtained from the Regional Inspector and subject to such conditions as he may specify:

Provided further that nothing in this sub-regulation shall prevent the use, in mines to which Regulation 144 does not apply, of flame or electric welding or repairing apparatus, if permitted by an order in writing of the manager. Every such order shall specify the person who shall be in charge of the apparatus, and it shall be the duty of such person to bring the apparatus back to the surface when no longer required belowground.

(3) At the end of a shift, unless the mine is worked by a succession of shifts, after all persons have left the mine, all lights shall be extinguished and all power cut off.

(4) (a) Proper provision shall be made to prevent an outbreak of fire or spontaneous heating belowground in a mine or the spread of fire to the mine from any adjoining mine; and adequate steps shall be taken to control or isolate any such fire or heating that may occur.

(b) Where in the opinion of the Regional Inspector, the provisions of clause (a) have not been complied with or where the steps so taken are inadequate, he may, by an order in writing, require such additional precautions or steps to be taken within such time as he may specify. If any such order is not complied with within the specified period, the Regional Inspector may prohibit, until the order has been complied with, the employment in the mine or part of any person whose employment is not, in his opinion, necessary for the purpose of complying with the order.

**Regulation 119** (Precautions after a fire has broken out).—(1) (a) On the appearance in any part of a mine, of smoke or other signs indicating that a fire or spontaneous heating has or may have broken out, all persons other than those whose presence in the mine is deemed necessary for dealing with the fire or heating shall be immediately withdrawn from the mine. No person, other than those required for dealing with or sealing off the fire or heating, shall be readmitted in the mine until the fire or heating has been extinguished or effectively sealed off and an examination has been made by the manager or by the under-manager or assistant manager, and the mine has been declared to be safe. A report of every such examination shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the examination: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit the employment in the mine, of persons other than those required to deal with the fire or heating.

(b) The examination required by clause (a) shall be made with an approved flame safety lamp and a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector. No additional light shall be used other than an approved safety lamp or torch.

(2) While any work of dealing with or sealing off a fire or heating below-ground is in progress—

- (a) a competent person shall be present on the spot throughout;
- (b) approved safety lamps or torches shall be exclusively used in such work: Provided that where safety lamps or torches are not immediately available, and it is necessary to take immediate steps to deal with an outbreak of fire, the provisions of this clause shall be deemed to have been complied with if persons engaged in dealing with the fire or heating are provided with approved safety lamps or torches as quickly as is reasonably practicable;
- (c) there shall be available, during the whole time that such work is in progress, at or near the place, two smoke helmets or other suitable apparatus for use in emergency; and
- (d) a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector shall be kept at all places where persons are employed.

**Regulation 120.** (Equipment for fire-fighting).—(1) A sufficient supply of sand or incombustible dust or sufficient portable fire-extinguishers shall be provided at all entrances to a mine, at every landing and shaft bottom in use, at all engine rooms and at all other places where timber, canvas, grease, oil or other inflammable material is stored.

(2) At every mine, the following provisions shall be made for dealing with any fire or heating belowground—

- (a) A sufficient supply of sand or incombustible dust or sufficient portable fire extinguishers shall be kept at suitable places at the entrance to each district; and
- (b) (i) where pipes containing water under pressure are available, an adequate number of taps, not more than 400 feet apart, shall be provided on such pipes. Hose-pipes not less than 200 feet in length, with necessary fittings, shall be kept readily available belowground; or  
(ii) portable water tanks fitted with hand pressure pumps and hose pipes not less than 200 feet in length and the necessary fittings shall be provided.
- (3) (i) Water shall not be used for fighting oil or electrical fires.  
(ii) Soda acid type extinguishers shall not be used for fighting oil or electrical fires.  
(iii) Foam type extinguishers shall not be used for fighting electrical fires.  
(iv) Fire extinguishers containing chemicals which are liable, when operated, to give off poisonous or noxious gases, shall not be provided or used belowground.

(4) A competent person shall, once at least in every three months, examine every fire-extinguisher so provided, and shall discharge and refill it as often as may be necessary to ensure that it is in proper working order. A report of every such examination or refilling shall be kept in a bound paged book kept for the purpose, and shall be signed and dated by the person making the examination or refilling.

**Regulation 121.** (Apparatus for testing for Carbon Monoxide).—In every mine to which Regulations 122(2) and 144 apply, there shall be kept at the mine constantly available for use two or more suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector: Provided that the Regional Inspector may, by an order in writing, require compliance with this regulation in the case of any other mine also.

**Regulation 122.** (Precautions when a fire exists belowground).—(1) In every mine in which a fire or spontaneous heating exists in case of workings below-ground (whether such fire has been sealed off by means of suitable stoppings or not), no work whatsoever shall be done in any seam or section lying either

above or below another seam or section on fire or believed to be on fire, except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(2) Approved safety lamps or torches shall be exclusively used in a mine in which there is a fire belowground, whether such fire is sealed off by stoppings or not:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, exempt any mine or part thereof from the operation of this sub-regulation if in his opinion compliance with these provisions is not necessary.

(3) In every mine to which sub-regulation (2) and Regulation 144 apply, arrangements shall be made, once at least in every three months, to ascertain the atmospheric conditions behind the stoppings built to seal off an area of old workings or a goaf or a fire or spontaneous heating, unless such stoppings are capable of resisting the force of an explosion: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, exempt any mine or part thereof from the operation of this sub-regulation where in his opinion special difficulties exist which make compliance with provisions thereof not reasonably practicable.

(4) (a) Every stopping erected to isolate or control a fire or spontaneous heating belowground shall be numbered, and shall be of adequate strength and so maintained as to prevent any leakage of air or gas through it. Where water is likely to accumulate behind any such stopping, there shall be provided in the stopping a suitable pipe or other device to drain away the water without permitting any leakage of air or gas etc.

(b) Where in any mine or part thereof the provisions of clause (a) have not been complied with, or where in the opinion of the Regional Inspector the steps so taken are inadequate, he may give notice in writing to the owner, agent or manager requiring him to take such protective measures, within such time, as he may specify. In case of non-compliance with the requirements of the notice, the Regional Inspector may, by an order in writing, prohibit, until the requirements of the notice have been complied with to his satisfaction, the employment in the mine or part, of any person whose employment is not, in his opinion, necessary for the purpose of complying with the requirements aforesaid.

(5) A competent person shall, once at least in every seven days, inspect all stoppings erected to isolate or control a fire or spontaneous heating belowground. During every such inspection, he shall ascertain the general condition of every stopping, check it for leakage and presence of gas, and ascertain the temperature and humidity of the atmosphere outbyre the stopping. For every stopping, he shall place his signature, with date, on a check-board provided for the purpose at a suitable position on the stopping; and this record shall be maintained for a period of not less than three months. A report of every such inspection shall also be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the inspection: Provided that the Regional Inspector may, by an order in writing, require such inspection to be made at such shorter intervals as he may specify.

**Regulation 123. (Precautions against dust).**—To prevent the liberation and accumulation of dust and the propagation of air-borne rust, the following provisions shall have effect, namely—

(1) (a) Dust shall be suppressed as close as possible, to its source of formation.

(b) As far as practicable the velocity of air in any road or working place shall be such as not to raise dust in the atmosphere.

(2) (a) The design, material, arrangement and condition of picks on a coal-cutting machine shall be such as to reduce the production of fine dust to the minimum. Where a chain machine is used, the chain shall always, while in use, be equipped with a complete set of picks.

(b) Where the Regional Inspector so requires, every mechanical coalcutter shall be fitted with suitable sprays and jets of water so as to damp the cuttings as those are formed.

## (3) While drilling in stone:

(a) the production of dust shall be reduced by—

- (i) using drill-bits which are sharp and of proper shape;
- (ii) keeping suitable air pressure on the bit; and
- (iii) clearing the cuttings from the bit;

(b) no person shall use, or cause or permit to be used, any power-drill unless a jet of water is directed onto the cutting edge of the drill throughout the drilling operation, or other equally efficient device approved by the Chief Inspector is provided so as to prevent the atmosphere being charged with dust: Provided that where drilling is done by hand, it shall be sufficient if holes are kept constantly moist during such drilling.

(c) where wet pneumatic drilling is performed, a minimum of 0.6 gallons of water per minute shall be made to flow through the drill. The water shall be turned on before turning on compressed air to the drill.

(4) In every part of a mine which is not naturally wet throughout, the floor, roof and sides of the workings shall, as far as practicable, be kept clear of any accumulation of coal dust.

(5) (a) The precautions against dangers from coal dust laid down in clause (Q) shall be observed in—

(i) every airway, haulage, trammimg, conveyor and travelling road which is not naturally wet throughout; and

(ii) every place within 400 feet of an area which has been or is being sealed off on account of fire or spontaneous heating, or in which extraction of pillars is in hand or is about to commence:

Provided that the Regional Inspector may, by an order in writing, also require the observance of these precautions in any other place if in his opinion they are necessary for ensuring the safety of persons.

(b) Every such road place shall—

(i) be treated with fine incombustible dust in such manner and at such intervals as will ensure that the dust on the floor, roof and sides throughout shall always consist of a mixture containing not less than 70 per cent. of incombustible matter; or

(ii) be treated with water in such manner and at such intervals as will ensure that the dust on the floor, roof and sides throughout is always combined with 30 per cent. by weight of water in intimate mixture; or

(iii) be treated in such manner as the Regional Inspector may approve by an order in writing.

(c) The incombustible dust used for the purpose of this sub-regulation shall be—

(i) free from any material containing injurious free silica;

(ii) of such fineness and character that it is readily dispersable into the air and that, when used in places which are not directly wetted by water from the strata, it does not cake but is dispersed into the air when blown upon with the mouth or by a suitable appliance; and

(iii) as far as practicable, light in colour.

No such incombustible dust shall continue to be used if it is found by tests, which shall be carried out regularly, not to comply with the foregoing requirements.

(6) For the purpose of ensuring adequate treatment of coal dust in places specified in sub-regulation (5), systematic samples of the dust shall be collected in a manner approved by the Regional Inspector, from all such roads and places and tested and analysed once at least in every 30 days. A record of such samples and analysis shall be kept in a bound paged book kept for the purpose, and shall be counter-signed and dated by the manager.

(7) (a) Every tub shall be so constructed and maintained as to prevent, as far as practicable, dust escaping through its sides or floor.

(b) If in any operation of loading, unloading, conveying, screening, cleaning, sorting, crushing or dressing of coal, or of collection of coal dust, dust is likely to be produced or raised in such quantity as may be injurious to the health of persons, effective exhaust ventilation or efficient watering or other arrangements shall be provided and used.

(8) In case of a mine where owing to special difficulties it is not possible to use water for dust suppression as required by the sub-regulations (3) and (7), the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the provisions thereof.

(9) Where dust cannot sufficiently be suppressed to safe limits, the Chief Inspector may, by an order in writing, require that every person exposed to such dust shall be provided with a suitable respirator.

(10) The manager shall take steps to ensure that every device, used for the suppression of dust is properly used and maintained.

(11) If any dispute arises as to whether any place is naturally wet or whether the steps taken to suppress dust under this regulation are adequate, it shall be referred to the Chief Inspector whose decision thereon shall be final.

**Regulation 124.** (Precautions against irruption of gas).—(1) In a mine, where safety lamps are not required to be used by or in pursuance of these regulations, if any working has approached within 100 feet of a known dyke, fault or other geological disturbance, the competent person appointed to make inspections under Regulation 113 shall, during the course of such inspection, test for the presence of inflammable gas with an approved flame safety lamp. During any such inspection, no lamp or light other than an approved safety lamp or torch shall be used.

(2) Where any working is extended to within 250 feet of any goaf or disused workings containing or likely to contain an accumulation of inflammable or noxious gases, there shall be maintained at least one bore-hole not less than 5 feet in advance of the working. The operation of drilling the bore-hole shall be carried out under the supervision of a competent person, and no lamp or light other than an approved safety lamp or torch shall be used in any such working.

**Regulation 125.** (Recovery and exploratory work).—(1) After an explosion of inflammable gas or coal dust has occurred in a mine, only such persons as are authorised by the manager or by the principal official present at the surface, shall be allowed to enter the mine.

(2) When it is intended or proposed to reopen a mine or part thereof, which has been isolated, sealed off or flooded with water to deal with a fire or spontaneous heating, the owner, agent or manager shall, not less than 14 days before the commencement of such work, give notice in writing of such intention or proposal to the Regional Inspector.

(3) Where it is intended to carry out any exploratory work in a mine or part belowground likely to contain irrespirable atmosphere—

(a) no party of less than three persons shall be allowed to proceed to carry out such work; and

(b) every such party shall carry a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector and also an approved flame safety lamp. No other lamp or light other than an approved lamp or torch shall be used during such exploratory work.

**Regulation 126.** (Danger from surface water).—(1) Where any mine or part thereof is so situated that there is any danger of inrush of surface water into the mine or part, adequate protection against such inrush shall be provided and maintained. In case of any dispute as to whether such protection is adequate or not, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) No workings shall be made in any mine vertically below—

(a) any part of any river, canal, lake, tank or other surface reservoir; or

(b) any spot lying within a horizontal distance of 50 feet from either bank of a river or canal or from the boundary of a lake, tank or other surface reservoir,

except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(3) Every application for permission under sub-regulation (2) shall be accompanied by two copies of a plan and section showing the existing position of the workings of the mine, the proposed layout of workings, the depth of the workings from the surface, the position and depth of any goaves in every seam in the neighbourhood, all faults, dykes and other geological disturbances and such other particulars as may affect the safety of the mine or of the persons employed therein.

**Explanation**.—Where sand or alluvium are lying in the course of a river, canal, lake, tank or reservoir, the depth from the surface shall be reckoned from the surface or hard ground underlying such sand or alluvium.

**Regulation 127.** (Danger from underground inundation).—(1) Proper provision shall be made in every mine to prevent irruption of water or other liquid matter from the workings of the same mine or of an adjoining mine.

(2) Where work is being done in—

- (i) any seam or section below another seam or section, or
- (ii) any place in a seam or section, which is at a lower level than any other place in a lower seam or section,

which contains or may contain an accumulation of water or other liquid matter, adequate precautions shall be taken against an irruption of water or other liquid matter into the workings.

(3) No working which has approached within a distance of 200 feet of any disused or abandoned workings (not being workings which have been examined and found to be free from accumulation of water or other liquid matter), whether in the same mine or in an adjoining mine, shall be extended further except with the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify: Provided that if any heavy seepage of water is noticed in any working approaching, but not within 200 feet of, any such disused or abandoned working, such working shall be immediately stopped, and the Regional Inspector, shall forthwith be informed about the occurrence. The working shall not be extended further except with the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify.

**Explanation**.—For the purpose of this sub-regulation, the distance between the said workings shall mean the shortest distance between the workings of the same seam or between any two seams or sections, as the case may be, measured in any direction whether horizontal, vertical or inclined.

(4) Every application or permission under sub-regulation (2) shall be accompanied by two copies of a plan and section showing the outline of such disused or abandoned workings in relation to the workings which are approaching the said workings, and such other information as may be available in respect of the said workings.

(5) No such working shall exceed 8 feet in width or height; and there shall be maintained at least one bore-hole near the centre of the working face, and sufficient flank holes on each side and where necessary, bore-holes above and below the working, at intervals of not more than 15 feet. All such bore-holes shall be, and shall be constantly maintained, at sufficient distance in advance of the working, and such distance shall in no case be less than 10 feet. These precautions shall be carried out under the direct supervision of a competent person specially authorised for the purpose.

(6) The precautions laid down in sub-regulation (5) shall also be observed in any other working where any heavy seepage of water is noticed whether approaching disused or abandoned workings or not.

**Regulation 128.** (Intentional flooding).—(1) When the owner, agent or manager intends or proposes, by introducing water from the surface or from any other part of the mine or from an adjacent mine, to flood any part of the workings of his mine, he shall give, in writing, not less than 14 days' notice of such intention or proposal to the Regional Inspector and to the management of all adjoining mines and of such other mines as might be affected by such flooding:

Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit such operations to be commenced on any day prior to the expiry of the said 14 days;

Provided further that the Regional Inspector may, by an order in writing, either prohibit any such operation or require that such operation shall not be commenced until such precautions as he may specify, have been taken to his satisfaction.

**Explanation.**—For the purposes of this sub-regulation a mine shall have the meaning assigned to it under Regulation 30.

(2) If the operations in respect of which notice is given under sub-regulation (1), are not commenced within 60 days from the expiry of the said 14 days, the notice shall be deemed to have lapsed and the provisions of the sub-regulation (1) shall apply as if no such notice had been given.

**Regulation 120.** (Construction of water dams etc.)—(1) Where in any mine it is intended to construct a reservoir, dam or other structure to withstand a pressure of water or other material which will flow when wet, or to control an inrush of water, the owner, agent or manager shall give in writing not less than 14 days' notice of such intention to the Regional Inspector. Every such notice shall be accompanied by two copies of plans and sections showing the design and other details of the proposed construction: Provided that where the safety of the mine or of the persons employed therein is seriously threatened, the provisions of this regulation shall be deemed to have been complied with if the said notice is given to the Regional Inspector as soon as the work of construction is commenced.

(2) The Regional Inspector may, by an order in writing, require such modifications or alterations to be made in the design of any such reservoir, dam or structure, as he may specify.

## CHAPTER XII

### VENTILATION

**Regulation 130.** (Standard of ventilation).—(1) It shall be the duty of the owner, agent or manager of every mine to take such steps as are necessary for securing that there is constantly produced in all parts of the mine below-ground, ventilation adequate to clear away smoke and steam; to dilute gasses that are inflammable or noxious so as to render them harmless; to provide air containing a sufficiency of oxygen; and to prevent such excessive rise of temperature or humidity as may be harmful to the health of persons. If any dispute arises as to whether the ventilation in a mine or part thereof is adequate or not, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) For the purpose of this regulation, a place shall not be deemed to be in a safe state for persons to work or pass therein if the air contains either less than 19 per cent. of oxygen or more than 0.5 per cent. of carbon dioxide or any noxious gas present in quantity likely to affect the health of any person; and such place shall not be deemed to be normally kept free from inflammable gas if the percentage of such gas at any point in that place exceeds one and a quarter.

(3) In every mine to which Regulations 122(2) and 144 apply, ventilation as aforesaid shall be produced by a suitable mechanical ventilator.

(4) If the Regional Inspector is of the opinion, with respect to any mine or part thereof, that the ventilation is not adequate he may, by an order in writing, require the installation and maintenance of such a mechanical ventilator as is capable of producing adequate ventilation in the mine or part.

**Regulation 131.** (Mechanical ventilators and their fittings).—(1) Every mechanical ventilator installed after the coming into force of these regulations shall be installed on the surface: Provided that this provision shall not be construed as preventing the installation belowground of mechanical ventilators—

(a) when such ventilators are auxiliary only, and the contrivance whereby the main ventilation is produced is placed on the surface and is capable of producing such amount of ventilation as, in an emergency, would be sufficient for the safety of the persons employed below-ground; or

(b) when such ventilators afford a complete additional system of ventilation, and the ventilation appliance provided on the surface is capable of producing such sufficient amount of ventilation as aforesaid, is immediately available for use in an emergency and is kept in an effective condition and is used once at least in every seven days.

(2) Every mechanical ventilator shall be installed in a fire-proof housing situated at a safe distance from the opening or shaft; and every mechanical ventilator, other than an auxiliary fan, shall be so designed and maintained that the current of air can be reversed when necessary.

(3) In every mine to which regulation 144 applies, if electricity is used for driving the mechanical ventilator, a separate circuit shall be provided between the main distribution points at the mine and the drive-motor of the ventilator.

(4) There shall be provided and maintained at every main mechanical ventilator—

(a) a suitable pressure-recording gauge or water-gauge; and

(b) a recording instrument by which the speed of the ventilator shall be continuously registered.

(5) At every shaft of incline ordinarily used for lowering or raising of persons or material, where a mechanical ventilator is installed, there shall be provided a properly constructed air-lock: Provided that unless the Regional Inspector so requires by an order in writing, the provision of this sub-regulation shall not apply to a shaft or incline where a mechanical ventilator was installed before the coming into force of these regulations.

(6) The flow of air produced by a mechanical ventilator shall, as far as practicable, be so arranged as to aid the natural ventilation.

(7) A competent person shall be appointed in writing by the manager to be in charge of every mechanical ventilator. He shall not be entrusted with any other additional duties.

**Regulation 132.** (Underground installation of mechanical ventilators).—In every mine to which regulations 122(2) and 144 apply, the following provisions shall have effect in relation to the installation belowground of mechanical ventilators—

(1) No mechanical ventilator, other than an auxiliary fan, shall be installed belowground unless the manager is satisfied, as a result of a survey of the ventilation of every part of the mine liable to be affected, that such installation is necessary or expedient for the proper ventilation of the mine and that it should be installed. Seven days' prior notice of every such installation, together with particulars of the survey aforesaid, shall be sent to the Regional Inspector.

*Explanation.*—The shifting of a ventilator from one place to another shall be deemed to be an installation of a ventilator for the purpose of this regulation.

(2) The Regional Inspector may at any time, by an order in writing, require the use of any ventilator installed belowground to be discontinued.

**Regulation 133.** (Installation and maintenance of mechanical ventilators).—(1) In every mine to which regulation 144 applies, where a mechanical ventilator is electrically driven, the drive-motor, irrespective of its type, shall not be placed in a return airway.

(2) The installation and maintenance of every mechanical ventilator shall be supervised and controlled by a competent person appointed for the purpose; and except in an emergency, no person shall start, stop, remove or in any way alter, repair or interfere with any such ventilator, except by or on the authority of the manager or other official authorised in this behalf. Particulars of every such stoppage or alteration, together with the duration thereof, shall be recorded in a bound paged book kept for the purpose.

(3) A competent person appointed for the purpose shall, once at least in every seven days, examine every mechanical ventilator in use and shall record the results thereof in a bound paged book kept for the purpose. Any serious defect revealed by such examination shall, without delay, be brought to the notice of the manager.

(4) (a) In every mine in which a mechanical ventilator is in use, the quantity of air shall once at least in every seven days, be measured—

(i) in every main intake end return airway of every seam or section, as near as practicable to the entrance to the mine;

- (ii) in every split, as near as practicable to the point of which the split commences;
- (iii) in every ventilating district as near as practicable to the point where the air is sub-divided at the end of a split and also where it enters the first working place; and
- (iv) any other point that the Regional Inspector may, by an order in writing, specify.

The measurements shall be entered in a bound paged book kept for the purpose: Provided that in a mine to which regulations 122(2) and 144 do not apply, it shall sufficient to take and record the air measurement once in every 30 days.

(b) The measurements referred to in clause (a) shall also be taken and recorded whenever the system of ventilation is so altered as to substantially affect or likely to affect the ventilation of the mine.

**Regulation 134.** (Standing Orders).—(1) The Regional Inspector may, by an order in writing, require the manager or any mine in which a mechanical ventilator other than an auxiliary fan is installed, to submit within 30 days, Standing Orders specifying the action that shall be taken with respect to the withdrawal of persons from the mine or part thereof in the event of a stoppage of the ventilator.

(2) The Regional Inspector may approve of such Standing Orders, either in the form submitted to him or with such additions and alterations as he may think fit; and the Standing Orders so approved shall be enforced at the mine.

(3) A copy of the Standing Orders shall be posted in conspicuous places in the mine, both above and belowground.

**Regulation 135.** (Splits and airways).—(1) For the purpose of ventilation every mine shall be divided into such number of districts or splits as to ensure that separate current of fresh air is made available in every such district or split.

(2) The intake air shall be so arranged as to travel away from all stagnant water.

(3) In every mine to which regulations 122(2) and 144 apply, for every ventilating district in a mine there shall be provided two main intake airways, one of which shall be used as a travelling road: Provided that if the Regional Inspector is satisfied that compliance with this regulation is not reasonably practicable, he may, by an order in writing and subject to such conditions as he may specify, grant exemption from the provisions thereof.

(4) Every connection between a main intake airway and a main return airway shall, until it has ceased to be required and has been sealed off, be provided with at least two doors so spaced that whenever one door is opened the other door can be kept closed. Steps shall be taken to ensure that at least one of the doors is always closed. Any such connection which has ceased to be so required, shall be effectively sealed.

**Regulation 136** (Brattices, doors, stoppings and air-crossings).—(1) There shall be provided and maintained in every mine such number of air-crossings, stoppings, doors, brattices and other devices as may be adequate to ensure compliance with the provisions of Regulation 130. In case of any dispute as to the adequacy of such ventilation devices, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) (a) The space between the frame of every ventilation door and the roof and sides of the road, shall be built up with masonry or concrete, not less than 10 inches in thickness.

(b) Every such door shall be self-closing; and whenever opened, it shall be closed as soon as possible, and shall not be propped or fixed so as to remain open.

(c) If such door is required to be frequently kept open for the passage of men or materials, there shall be, throughout every working shift, a door-attendant at the door.

(d) If a door is not in use, it shall be taken off its hinges and placed in such a position that it shall not cause any obstruction to the air current.

(3) (a) Every stopping between the main intake and main return airways shall be constructed of masonry or brickwork, not less than 10 inches in thickness or such greater thickness as may be required by the Regional Inspector, and shall be faced with a sufficient thickness of lime or cement plaster to prevent leakage of air.

(b) Every stopping shall be kept accessible for inspection.

(4) The floors and walls of every air-crossing shall be not less than 10 inches in thickness if constructed of masonry or of concrete not properly reinforced, and not less than 6 inches in thickness if constructed of properly reinforced concrete.

(5) Every air-crossing, ventilation stopping, door or brattice shall be maintained in efficient working order and good repair.

(6) A competent person shall, once at least in every seven days, examine every airway, air-crossing, ventilation stopping and door in use, and shall record the result thereof in a bound paged book kept for the purpose, and shall sign the same and date his signature.

**Regulation 137. (Auxiliary fans).—(1) Every auxiliary fan:**

(a) shall be installed, located and worked in such a manner that:

- (i) a sufficient quantity of air shall, at all times, reach it so as to ensure that it does not re-circulate air; and
- (ii) there is no risk of the air which it circulates being contaminated by any substantial quantity of inflammable or noxious gases or dust;

(b) shall, whether driven electrically or otherwise, be efficiently connected with earth so as to avoid the accumulation of an electrostatic charge; and

(c) shall have an air-duct for conducting the air to or from the face or blind end; and such air-duct shall be so maintained as to minimise any leakage of air and to ensure an adequate supply of air to within 15 feet of the face or blind end.

(2) No auxiliary fan shall be started, stopped, removed, replaced or in any way altered or interfered with, except by or on the authority of an official.

(3) No person shall enter or remain in any place which is dependent for its ventilation on an auxiliary fan, unless such fan is operating efficiently. Whenever the ventilation of any such place has been interrupted, whether by the stoppage of the fan or otherwise, no person shall so enter or remain except for the purpose of restoring the ventilation or unless the place has been examined by a competent person and declared safe.

**(4) In every mine to which Regulations 122(2) and 144 apply—**

(a) two or more auxiliary fans shall not be installed in the same ventilating district or split, except with the permission in writing of the Regional Inspector and subject to such conditions as he may specify. The application made for any such installation shall be accompanied by a plan showing the general system of ventilation, the quantity of air flowing in the split and the proposed position of the fans; and

(b) the Regional Inspector may at any time, by an order in writing, require that the use of any auxiliary fan shall be discontinued.

**Regulation 138. (Precautions against fire in ventilation appliances).—The covering of all shafts sealed off or covered for ventilation purposes, all fan drifts, ducts or casings and parts of fans within such drifts, ducts or casings, and all air-crossings and ventilation doors shall be constructed of fire-proof material; Provided that this regulation shall not apply to the small lid or covering of a shaft covering, operated by the winding rope.**

**Regulation 139. (Ventilation plans to be brought up-to-date).—As soon as any alteration is made in the ventilation of a mine, involving the erection or removal of an air-crossing or stopping or the alteration in the position or installation of a ventilator belowground, the erection, removal, alteration or installation, as the case may, shall be shown on the ventilation plan maintained under Regulation 59.**

**Regulation 140. (Obstructions, interruptions and alterations).—(1) No material or debris shall be allowed to accumulate in roads and workings belowground so as to impede the ventilation.**

(2) All roads and workings belowground which are not adequately ventilated shall be fenced so as to effectively prevent persons entering the same.

(3) If any person becomes aware of any obstruction in, or interference with, or deficiency of, ventilation in any mine or part thereof, he shall—

(a) if it falls within his power to remedy such obstruction, interference or deficiency, immediately take steps to do so; or

(b) cease all work at that place, and shall forthwith inform his superior official of such obstruction, interference or deficiency.

(4) Whenever there is any interruption of ventilation by the stoppage of any mechanical ventilator, including an auxiliary fan, installed belowground, the official in charge of the mine or part thereof shall immediately take precautionary measures, including withdrawal of men, if necessary, against dangers that may arise out of non-compliance with the provisions of Regulation 130 to restore the ventilation in the mine or part.

(5) No person shall alter the general system of ventilation in any mine or part thereof except with the authority of the manager: Provided that in an emergency, an official of the mine may carry out such alteration as he may deem necessary for the safety of persons, but he shall as soon as possible inform his superior official and the manager about the same.

**Regulation 141.** (Precautions against gas during de-watering and re-opening).—

(1) No disused mine or shaft shall be de-watered except under the constant supervision of a competent person; and during such de-watering, approved safety lamps or torches shall be exclusively used, and there shall also be kept burning at every place where persons are at work at least one approved flame safety lamp.

(2) (a) The first inspection of a mine or part thereof which is re-opened after a discontinuance of mining operations for a period exceeding seven days and of any part of a mine after being de-watered, shall be made by a competent person with an approved flame safety lamp; and during such inspection, no additional light or lamp other than an approved electric torch or lamp shall be used.

(b) The result of every such inspection shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person making the inspection.

**Regulation 142.** (Precautions against inflammable and noxious gasses).—(1) For the purpose of this regulation, inflammable gas shall be deemed to have been found or detected when it is indicated by the lowered flame of a flame safety lamp or, where methane indicators are used, they indicate one and a quarter per cent or more of inflammable gas.

(2) When any person detects the presence of inflammable gas he shall not brush or waft it out, but shall immediately withdraw from the place and shall inform his superior official and manager about the same.

(3) Where in any place in a mine, inflammable or noxious gas is detected, all persons shall be withdrawn from the place, and the place shall be immediately fenced off so as to effectively prevent persons entering the same. The competent person in charge shall, without delay, take steps to remove the gas by improving the ventilation.

(4) During the removal of such gas all persons, except those necessary for such removal, shall be withdrawn from the return side of the ventilating district in which the gas has been detected unless the quantity of gas is, in the opinion of the competent person, so small that no such withdrawal is necessary: Provided that where the danger arises from the presence of inflammable gas, no naked light shall be used in the ventilating district in which the gas is detected.

(5) No person shall be re-admitted into the place where the gas was detected until a competent person has examined the place and has reported that the place is free from gas. Every such examination shall be made with an approved flame safety lamp and, in the case of noxious gas, also with a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector.

(6) Particulars of every occurrence referred to in sub-regulation (2) and of every examination made under sub-regulation (5), together with a statement as to where and when the gas was found and when it was removed, and in case

of inflammable gas, the percentage thereof shall be recorded in a bound paged book kept for the purpose. Every such entry shall be signed and dated by the competent person making the report, and countersigned and dated by the manager.

**Regulation 143.** (Inspection of unused workings for gas).—In any seam in a mine to which Regulations 122(2) and 144 apply, or where the Regional Inspector may require by an order in writing, all unused workings which have not been sealed off, shall once at least in every seven days be inspected by a competent persons for the presence of inflammable or noxious gas. A report of every such inspection shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the inspection.

**Regulation 144.** (Safety lamps to be used in gassy mines).—No lamp or light other than an approved safety lamp or torch or other installation permitted under the Indian Electricity Rules, 1937, shall be used or permitted to be used below-ground in any mine,—

- (a) in any seam in which an explosion or ignition of inflammable gas has occurred;
- (b) in any ventilating district in which inflammable gas has been found; and
- (c) in any place in which, in the opinion of the Regional Inspector, inflammable gas is likely to be present in such quantities as to render the use of naked lights dangerous:

Provided that if safety lamps are not immediately available in the case of any mine to which clauses (b) and (c) apply, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, grant a temporary exemption from the operation thereof until such time as safety lamps can be obtained:

Provided further that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, exempt any mine or part thereof from the operation of this regulation on the ground that on account of the special character of the mine, the use of safety lamps is not necessary therein.

**Regulation 145.** (Determination of percentage of inflammable gas).—Where electric energy is used in any ventilating district in a mine to which Regulation 144 applies, determinations shall be made of the percentage of inflammable gas present in the general air; and the following provisions shall apply in case of such determination, namely—

(1) The determination shall be made by a competent person, and either by means of an apparatus of a type approved for the purpose by the Chief Inspector, or by analysis of samples of air. If determinations are made by the analysis of air, the samples shall be analysed within four days of the taking thereof.

(2) The determinations shall be made or samples of air taken, as the case may be, at suitable points fixed by the manager, on the intake side of the first working place, and on the return side of the last working place in the district: Provided that where the Regional Inspector is of the opinion that the location of any such point is unsuitable, he may, by an order in writing, require the manager to fix some other point or points in substitution thereof.

(3) The determinations shall be made or samples of air taken, as the case may be, once at least in every seven days; so however that—

(a) if any determination shows the percentage of inflammable gas to exceed 0·8, determinations shall be made or samples of air taken, unless the Regional Inspector otherwise permits by an order in writing, at intervals not exceeding 24 hours for so long as such content exceeds that percentage and for the seven next following working days; and

(b) if the determinations made during the 30 days immediately preceding any day have shown the percentage of inflammable gas to be below 0·6, it shall be sufficient to make such determinations or take such samples, once in every 30 days for so long as such content does not exceed that percentage:

Provided that when any alteration is made in the system of ventilation so as to substantially effect or likely to effect the ventilation of the mine, such determination shall be made within 24 hours of such alteration.

(4) Particulars of every such determination shall be recorded in a bound page book kept for the purpose.

(5) If any determination in any ventilating district shows the percentage of inflammable gas to exceed one and a quarter, the supply of electric energy shall be cut off immediately from all cables and apparatus in the district, and a written report thereof submitted to the Regional Inspector forthwith.

**Regulation 146.** (Management in gassy mines).—(1) Notwithstanding anything contained in Regulation 31, no person shall act, or continue to act, or be appointed, as manager of a mine to which Regulation 144 applies; unless he holds a First Class Manager's Certificate.

(2) In every mine to which Regulation 144 applies and the average output of which, as defined in Regulation 30, exceeds 2,500 tons, the manager shall be assisted by a Ventilation Officer holding a Manager's Certificate and responsible for supervising the maintenance of the ventilation system of the mine: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit a person holding an Overman's Certificate to be appointed as Ventilation Officer.

**Regulation 147.** (General precautions in gassy mines).—In every mine or part thereof to which Regulation 144 applies, the following provisions shall have effect, namely—

(1) In every gallery, the current of air shall be conducted to the working face by means of suitable brattices or air-pipes.

(2) No narrow 'main' or advance gallery shall be driven more than 10 feet ahead of the widened gallery.

(3) All stoppings between main intake and main return airways and all air-crossing shall be so constructed and maintained as to withstand the force of an explosion.

(4) The main air current shall be so split and coursed that an air current which ventilates a goaved out area, whether packed or unpacked, or any disused workings shall not, except with the prior permission in writing of the Regional Inspector, ventilate any workings where coal is being extracted.

(5) No major alteration shall be made in the system of ventilation unless prior permission has been obtained from the Regional Inspector: Provided that where the safety of the mine or of the persons employed therein is seriously threatened, the provision of this sub-regulation shall be deemed to have been complied with, if information of such alteration is sent to the Regional Inspector forthwith.

(6) Except in an emergency, when a major alteration is being made in the system of ventilation, only such persons as are engaged in making the alteration shall be present below ground.

**Regulation 148.** (Contrabands).—In every mine to which Regulations 122(2) and 144 apply, the following provisions shall have effect, namely—

(1) No person shall have in his possession belowground any cigar, cigarette, 'bir' or other smoking apparatus, or any match or other apparatus of any kind capable of producing a light, flame or spark: Provided that nothing in this sub-regulation shall be deemed to prohibit the use belowground of any apparatus for the purpose of shot-firing or of relighting safety lamps, of a type approved by the Chief Inspector.

(2) For the purpose of ascertaining whether any person proceeding below-ground has in his possession any article as aforesaid, a competent person other than the bunksman, if any, shall be appointed to search every such person immediately before he enters the mine. The competent person shall be on duty throughout the shift, and no duties other than those under this regulation shall be entrusted to him.

(3) The competent person so appointed shall make a thorough search for the articles aforesaid, and in particular shall—

- (a) search or turn out all pockets;
- (b) pass his hand over all clothings; and
- (c) examine any article in the possession of the person searched.

Such search shall be made every time a person proceeds below ground notwithstanding that he has been previously also searched.

(4) If the competent person suspects that the person searched is concealing any article as aforesaid, he shall detain him, and as soon as possible refer the matter to the manager or under-manager or assistant manager. No such person shall be allowed to enter the mine until the manager or other superior official is satisfied that the person has no such article in his possession.

(5) Any person who refuses to allow himself to be so searched or, who on being searched is found to have in his possession any of the articles aforesaid, shall be guilty of an offence against this regulation.

**Regulation 149.** (Underground relighting stations).—In every mine to which Regulations 122(2) and 144 apply, lamp stations for re-lighting safety lamps may be fixed by the manager at suitable places belowground. Every such station shall be legibly marked 'RELIGHTING STATION' and shall be situated in a main intake airway; and shall be placed in charge of a competent person. No person shall be so appointed unless he holds a Gas-testing Certificate.

### CHAPTER XIII

#### LIGHTING AND SAFETY LAMPS

**Regulation 150 (Whitewashing).**—The roof and sides of the following places belowground in a mine shall be kept effectively whitewashed—

- (a) every shaft inset and shaft siding which is in regular use;
- (b) the top and bottom of every haulage plane, every regular stopping place, siding, landing, passby and junction, except within 300 feet of the face;
- (c) every travelling road;
- (d) every room and place containing any engine, motor or other apparatus; and
- (e) every first aid station belowground.

**Regulation 151 (Fixed lighting).**—(1) Adequate fixed lighting arrangements shall be made during working hours—

- (a) on the surface where the natural light is insufficient: in every engine house, in the vicinity of every working shaft, at every opencast working, at every shunting or marshalling yard, and at every place where persons have to work or pass;
- (b) belowground—
  - (i) in all travelling roads normally used by 50 or more persons during any shift;
  - (ii) at the top and bottom of every self-acting incline;
  - (iii) at every place on a haulage road, at which tubs are regularly coupled or uncoupled or attached to or detached from a haulage rope;
  - (iv) at every place at which tubs are regularly filled mechanically;
  - (v) at every room and place containing any engine, motor or other apparatus;
  - (vi) at every place where any pillar is under extraction; and
  - (vii) every first aid station belowground.

Provided that in mines to which regulation 144 applies, the lighting fixtures shall comply with the provisions of Indian Electricity Rules, 1937.

(2) The lighting provided in a mine shall, as far as possible, be so arranged as to prevent glare or eye-strain.

(3) Where electric energy is available at the mine, the lighting arrangement made under sub-regulation (1) shall be by electrical means.

(4) Every electrical lamp-fitting shall be so constructed as to protect it from accidental damage; and adequate precautions shall be taken to prevent lamps being damaged from shotfiring.

(5) Where electric lighting is used, an additional light or lamp having no connection with electric supply shall be kept continuously burning—

- (i) below ground, in every landing and in every engine room; and
- (ii) on the surface, after dark, at the top of every working shaft and in every engine room.

**Regulation 152** (Electric lighting in gassy mines).—(1) Subject to the provisions of the rules made under the Indian Electricity Act, 1910 or under any Act amending or repealing the same, relating to the use of electric energy in parts of mines in which inflammable gas is likely to occur in quantity sufficient to be indicative of danger, electric lighting from a source of supply external to the lighting unit may be used—

- (a) on any road or place ventilated by intake air; and
- (b) on any other road or place not within 600 feet of the nearest face: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, relax the provisions of this clause.

(2) In every mine or part thereof to which Regulation 144 applies—

- (a) every electrical lighting apparatus shall be of a type approved by the Chief Inspector; and
- (b) electric lighting from a source of electric power enclosed in the lighting unit, electric lights which are fittings or accessories to machinery or electrical plant (including signalling apparatus), and any other means of lighting not specifically mentioned in this regulation, may be used if so permitted by the Chief Inspector by an order in writing and subject to such conditions as he may specify.

**Regulation 153** (Every person to carry a light).—(1) The owner, agent or manager shall provide every person employed belowground with a light or lamp adequate to enable him to perform his duties in a proper and thorough manner; and no such person shall proceed or remain belowground without such light or lamp. No person shall leave such light or lamp belowground unless he has placed it in the charge of some other person remaining therein; and on his return to the surface, he shall immediately return the lamp to the lamp-room.

(2) The number of safety lamps at every mine shall be adequate to permit thorough cleaning and checking before they are issued. If any dispute arises as to the sufficiency or otherwise of the safety lamps provided at a mine, it shall be referred to the Chief Inspector whose decision thereon shall be final.

**Regulation 154.** (Standards of lighting).—(1) If any dispute arises as to whether any lamp or light is of adequate lighting performance or not, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) The Chief Inspector may, from time to time, by notification in the Official Gazette, specify—

- (a) the type of lamp to be provided to specified categories of persons employed in a mine; or
- (b) the standard of lighting to be provided in specified areas or places in a mine.

**Regulation 155** (Maintenance and examination of safety lamps).—In every mine or part thereof in which the use of safety lamps is for the time being required by or in pursuance of the regulations, the following provisions shall have effect, namely—

(1) A competent person appointed for the purpose shall clean, trim, examine and lock securely all such lamps before they are issued for use, and no such lamp shall be issued for use unless it is in safe working order and securely locked.

(2) A competent person appointed for the purpose shall examine every safety lamp at the surface immediately before it is taken belowground for use; and shall assure himself, as far as practicable from external observation, that such lamp is in safe working order and securely locked. The person so appointed shall not perform any other duties, except in a mine where the number of persons employed belowground at any time is not more than 50.

(3) A competent person appointed for the purpose shall examine every safety lamp on its being returned after use. If on such examination, any lamp is found to be damaged or misused, he shall record the nature of the damage or misuse in a bound paged book kept for the purpose. Every such entry shall be countersigned and dated by the manager.

(4) The manager, undermanager or assistant manager, or a competent person appointed for the purpose shall, once at least in every seven days, examine thoroughly all safety lamps in use, and shall record the result of examination of each lamp in a bound paged book kept for the purpose.

(5) No person shall be appointed as a competent person under this regulation unless he holds a Manager's, Overman's or Gas-testing Certificate.

**Regulation 156** (Use of safety lamps).—(1) Every safety lamp shall be numbered; and so long as the lamp is in use, the number thereof shall be legibly maintained.

(2) A competent person appointed for the purpose shall maintain a correct record of the lamps issued from and returned to the lamp-room; and in the record so maintained, the number of the lamp issued to any person shall be entered against his name.

(3) If any person returns to the lamp-room a lamp other than the one issued to him, he shall explain the cause and circumstances of the same.

(4) No unauthorised person shall either himself take, or give out, any safety lamp from the lamp-room.

(5) Every person who receives a lamp shall satisfy himself that it is complete and in good order; and should he find any defect therein, he shall immediately return it to the lamp-room.

(6) No person shall wilfully damage or improperly use, or unlock or open, or attempt to unlock or open any safety lamp.

(7) Should any person find that the safety lamp in his possession has become defective, he shall at once carefully extinguish the flame, if any, and report the fact to his superior official.

**Regulation 157** (Maintenance and repairs of safety lamps).—(1) Every safety lamp shall be properly assembled and maintained in good order. If any lamp is found to be defective or damaged, it shall not be issued for use until the defect or damage has been remedied.

(2) If the wires of any gauze of a flame safety lamp are broken or burnt away, the gauze shall not be reconditioned for further use.

(3) Damaged and defective gauzes, glasses and other parts of a safety lamp shall not be kept or stored in the safety lamp-room.

(4) No glass of a safety lamp, and no bulb of an electric safety lamp, shall be replaced except by a glass or bulb of such type as the Chief Inspector may, from time to time, specify by notification in the Official Gazette.

**Regulation 158.** (Precautions) to be taken in safety lamp-rooms.—(1) No unauthorised person shall enter the safety lamp-room.

(2) No person shall smoke in the safety lamp-room.

(3) In every flame safety lamp kept for the purpose of inspection or of testing for or detecting the presence of inflammable gas, no oil other than an oil of a type approved by the Chief Inspector shall be used.

(4) Where petrol, benzol, or any other highly volatile spirit is used in safety lamps, the following precautions shall be observed—

- (a) lamps shall be cleaned, refitted and refilled in a separate room;
- (b) only such quantity of volatile spirit as is required for one working day shall be kept in any such room;
- (c) internal relighters shall not be taken out of lamps and cleaned, repaired or refitted on the same table where lamps are cleaned, refitted or refilled; and
- (d) adequate number of suitable fire extinguishers shall be provided and kept ready for use in every such room.

## CHAPTER XIV

## EXPLOSIVES AND SHOTFIRING

**Regulation 159** (Type of explosives to be used in mines).—(1) No explosive shall be used in a mine except that provided by the owner, agent or manager. The explosives provided for use shall be of good quality and, as far as practically known, in good condition.

(2) No liquid oxygen explosives shall be used in any workings belowground.

→ **Regulation 160** (Storage of explosives).—(1) No owner, agent or manager shall store, or knowingly allow any other person to store, within the premises of a mine any explosives other than in accordance with the provisions of rules made under the Indian Explosives Act, 1884.

(2) Explosives shall not be taken into or kept in any building but only in a magazine duly approved by the Licensing Authority: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit the use of any store or premises specially constructed at or near the entrance to a mine for the temporary storage of explosives intended for use in the mine or of surplus explosives brought out of the mine at the end of a shift.

(3) Every licence granted by the Licensing Authority for the storage of explosives, or a true copy thereof, shall be kept at the office of the mine.

**Regulation 161** (Cartridges).—(1) No explosives, other than a fuse or a detonator, shall be issued for use in a mine, or taken into or used in any part of a mine; unless it is in the form of a cartridge. Cartridges shall be used only in the form in which they are received.

(2) The preparation of cartridges from loose gunpowder, the drying of gunpowder and the reconstruction of damp cartridges shall be carried out by a competent person and only in a place approved by the Licensing Authority and in accordance with the rules made under the Indian Explosives Act, 1884.

**Regulation 162** (Magazines, stores and premises to store explosives).—(1) Every magazine, or store or premises, where explosives are stored shall be in charge of a competent person who shall be responsible for the proper receipt, storage and issue of explosives.

(2) Explosives shall not be issued from the magazine unless they are required for immediate use. If explosives are returned to the magazine, or store or premises, they shall be re-issued before fresh stock is used.

(3) Explosives shall be issued only to competent persons upon the written requisition signed by an official authorised for the purpose, and only against their signature or thumb impression. Such requisition shall be preserved by the person in charge of the magazine or store or premises.

(4) The person in charge of the magazine or store or premises shall maintain, in a bound paged book kept for the purpose, a clear and accurate record of explosives issued to each competent person and a similar record of explosives returned to the magazine or store or premises.

**Regulation 163** (Cases and containers for carrying explosives).—(1) No explosive shall be issued from the magazine or taken into any mine except in a case or container of substantial construction and securely locked. No such case or container provided for carrying detonators shall be constructed of metal or other conductive material.

(2) No detonator shall be kept in a case or container which contains other explosives, materials or tools; and two or more types of detonators shall not be kept in the same case or container: Provided that nothing in this sub-regulation shall restrict the conveyance of primer cartridges fitted with detonators in the same case or container for use in a wet working or in a sinking shaft.

(3) No detonator shall be taken out from a case or container unless it is required for immediate use.

(4) No case or container shall contain more than 10 pounds of explosives; and no person shall have in his possession at one time in any one place more than one such case or container: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit the carrying of a

larger quantity of explosives in a single case or container, or the use, at one time in one place, of more than one such case or container.

(5) Every case or container shall be numbered; and as far as practicable, the same case or container shall be issued to each shotfirer every day.

(6) They key of every case or container shall be retained by the shotfirer in his own possession throughout his shift.

**Regulation 164** (Carrying of explosives).—(1) Where explosives are being carried on a ladder, each case or container shall be securely fastened to the person carrying it.

(2) No person other than a shotfirer shall carry any priming cartridge into a shaft which is in the course of being sunk. No such cartridge shall be so carried except in a thick felt bag or other container sufficient to protect it from shock.

**Regulation 165** (Reserve Stations).—No case or container containing explosives shall be left or kept belowground except in a place appointed by the manager for the purpose and so situated that it is not frequented by workpersons. Every such place shall be free of any overhang; and shall be kept clean, adequately fenced, and legibly marked 'RESERVE STATION'.

**Regulation 166** (Shotfires).—(1) The preparation of charges, the charging of holes and the firing of shots shall be carried out by or in the presence of a competent person, in these regulations referred to as "shotfirer".

(2) No person shall be qualified to be appointed, or to be a shotfirer in any mine unless he is the holder of a Manager's, Overman's, Sirdar's or Shotfirer's Certificate.

(3) If 30 or more persons are employed belowground at any one time in any mine or district under the charge of a competent person appointed under Regulation 118, such person shall not perform the duties of a shotfirer.

(4) No person whose wages depend on the amount of coal, rock or debris obtained by firing shots, shall be appointed to perform the duties of a shotfirer.

(5) The manager shall fix from time to time the maximum number of shots that a shotfirer may fire in any one shift; and such number shall not, unless the Regional Inspector, by an order in writing and subject to such conditions as he may specify therein, otherwise permits, exceed 50, and shall be based upon—

- (i) the time normally required to prepare or fire a shot in accordance with the provisions of these regulations;
- (ii) the time required for that shotfirer to move between places where shots are fired;
- (iii) the assistance, if any, available to him in the performance of his said duties; and
- (iv) any other duties assigned to him, whether statutory or otherwise:

Provided that where the Regional Inspector is of the opinion that it is necessary for the proper observance of the provisions of the regulations that the number of shots so fired shall be reduced, he may, by an order in writing, require the manager to fix a lower maximum number of shots as aforesaid.

(6) The number of detonators issued to, and in the possession of, a shotfirer during his shift shall not exceed the maximum number of shots that he is permitted to fire under sub-regulation (5).

**Regulation 167** (Shotfire tools).—(1) Every shotfirer on duty shall be provided with—

- (a) a suitable electric torch or lamp, and a pocket watch;
- (b) a tool, made entirely of wood, suitable for charging and stemming shotholes;
- (c) a scraper suitable for cleaning out shotholes;
- (d) where fuses are used, a knife for cutting of fuses and a pair of suitable crimpers for crimping detonators; and
- (e) in a mine to which regulations 122(2) and 144 apply, a tool of a type approved by the Chief Inspector for detecting cracks, etc.

(2) No tool or appliance other than that provided as above shall be used by a shotfirer.

**Regulation 168** (Drilling, charging, stemming and firing of shotholes).—(1) No drill shall be used for boring a shothole unless it allows a clearance of at least 1/8th inch over the diameter of the cartridge of explosive, which it is intended to use.

(2) No shothole shall be charged before it is thoroughly cleaned.

(3) Before any shothole is charged, the direction of the hole shall, where practicable, be distinctly marked on the roof or other convenient place.

(4) No detonator shall be inserted into a priming cartridge until immediately before it is to be used: Provided that in case of wet workings, priming cartridges may be prepared at the nearest convenient dry place; and such primed cartridges shall be carried to the working place in a securely closed case or container. Detonators once inserted into a priming cartridge, shall not be taken out.

(5) The charge in any shothole shall consist of one or more complete cartridges of the same diameter and the same type of explosive.

(6) No shot shall be fired by a fuse less than four feet in length.

(7) The shotfirer shall, to the best of his judgment, ensure that no charge in a shothole is overcharged, having regard to the task to be performed.

(8) Every shothole shall be stemmed with sufficient and suitable non-inflammable stemming so as to prevent the shot from blowing out. Only sand loosely filled in, or soft clay lightly pressed home, or a compact mixture of sand and clay, or water, shall be used as stemming. In no case shall coal dust be used for stemming.

(9) In charging or stemming a shothole, no metallic tool, scraper or rod shall be used; and no explosive shall be forcibly pressed into a hole of insufficient size.

(10) Blasting gelatine or other high explosives shall not be lighted in order to set fire to fuses.

(11) All surplus explosives shall be removed from the vicinity of a shothole before a light is brought near it for the purpose of lighting the fuse.

(12) As far as practicable, a shot shall be fired by the same shotfirer who charged it.

(13) Except in a stone drift or a sinking shaft, not more than 10 shots shall be fired in any one round. Where more than six shots are to be fired in one round, they shall be fired electrically.

(14) Where a large number of shots have to be fired, shotfiring shall, as far as practicable, be carried out between shifts.

(15) No shothole shall be charged except those which are to be fired in that round; and all shotholes which have been charged shall be fired in one round.

(16) In any mine in which explosives other than gunpowder are used, every shot shall, if so required by the Regional Inspector, be fired electrically.

**Regulation 169** (Electric shotfiring).—Where shots are fired electrically, the following provisions shall have effect, namely—

(1) No delay-action detonator shall be used, except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(2) (a) No shot shall be fired except by means of a suitable shotfiring apparatus; and the number of shots fired at any one time by the apparatus shall not exceed the number for which it is designed.

(b) Every electrical shot-firing apparatus shall be so constructed and used that—

(i) it can only be operated by a removable handle or plug. This handle or plug shall not be placed in position until a shot is about to be fired and shall be removed as soon as a shot has been fired; and

(ii) the firing circuit is made and broken either automatically or by means of a push-button switch.

(c) (i) No apparatus shall be used which is defective; and every apparatus shall, once at least in every three months, be cleaned and thoroughly overhauled by a competent person.

(ii) If the apparatus fails to fire all the shots in a properly connected circuit, the shotfirer shall return the apparatus to the surface as soon as possible; and it shall not be used again unless it has been tested on the surface and found to be in safe working order.

(iii) The result of every overhaul, test or repair as aforesaid shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person making the overhaul, test or repair.

(3) No current from a lighting or power circuit shall be used for firing shots.  
 (4) The shotfirer shall—

- (a) retain the key of the firing apparatus in his possession throughout his shift;
- (b) use a well-insulated cable of sufficient length to permit him to take proper shelter, and in no case shall it be less than 60 feet;
- (c) before coupling the cable to the firing apparatus, couple up the cable himself to the detonator leads;
- (d) take care to prevent the cable coming into contact with any power or lighting cable or other electrical apparatus;
- (e) take adequate precautions to protect electrical conductors and apparatus from injury;
- (f) himself couple the cable to the firing apparatus; and before doing so, see that all persons in the vicinity have taken proper shelter at a safe distance; and
- (g) after firing the shots and before entering the place of firing, disconnect the cable from the firing apparatus.

(5) When more than one shot are to be fired at the same time—

- (a) care shall be taken that all connections are properly made;
- (b) all shots to be fired shall be connected in series;
- (c) the circuit shall be tested, either for electrical resistance or for continuity, before connecting it to the firing apparatus; and
- (d) the cable to the shotfirer apparatus shall be connected last.

**Regulation 170** (Taking shelters etc).—(1) The shotfirer shall, before a shot is fired by him, see that all persons in the vicinity have taken proper shelter. He shall also take suitable steps to prevent any person approaching the shot and shall himself take adequate shelters: Provided that in an opencast working the shotfirer shall give sufficient warning, by an efficient system of signals or by other means approved by the manager, over the entire area of the danger zone, that is to say, an area of ground falling within a radius of 1,000 feet from the place of firing.

(2) Where the workings, either open or belowground, offer insufficient protection against flying fragments or missiles, adequate shelters or other protection shall be provided.

(3) When two working places below ground have approached within 15 feet of each other, the shotfirer shall not fire any shot in any one of the said workings unless all persons have been withdrawn from the other working place and the same has been so fenced off as to prevent persons inadvertently coming in direct line of the shot.

**Regulation 171** (Precaution against coal dust).—No shot shall be fired at any place belowground unless the place itself and all accessible places, including the roof and sides, within a distance of 60 feet—

- (a) are naturally wet; or
- (b) have been drenched with water to such an extent that there is no danger of dry coal dust being raised into the air by the shot; or
- (c) have been thoroughly treated with incombustible dust in the manner required in Regulation 123(5).

**Regulation 172** (Conditions requiring use of Permitted Explosives).—(1) Notwithstanding anything contained in the regulations, two or more shots shall not be charged or fired in the same place simultaneously belowground if the explosive used is not a Permitted Explosive: Provided that this sub-regulation shall not apply to—

- (a) a working place in which the roof, floor and sides within a radius of 60 feet of the place where shots are to be fired are naturally wet; or
- (b) a stone-drift, if it does not contain dry coal dust; or
- (c) a shaft which is in the course of being sunk.

(2) No explosive other than a Permitted Explosive shall be used—

(a) in any mine to which Regulations 122(2) and 144 apply; and

(b) in any other mine in every place which is not naturally wet:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit in any mine or part, the use of explosives other than Permitted Explosives.

(3) In any place belowground where inflammable gas is likely to be liberated by a shot, Permitted Sheathed Explosives or other permitted explosive equally safe, or Cordox or Hydrox shall be used.

**Regulation 173** (Precautions in the use of Permitted Explosives).—In any mine in which the use of Permitted Explosives is required under Regulation 172—

(a) no shot shall be fired in coal unless—

(i) the coal has been undercut, overcut or sidecut; and

(ii) the length of the shothole is at least six inches less than the depth of the cut.

(b) no detonator shall be used, unless it is an electric detonator with a copper tube;

(c) where more shots than one are charged for firing, the shots shall be fired simultaneously; and

(d) the aggregate charge in any number of shots fired simultaneously in coal shall not exceed such permissible maximum charge, as the Chief Inspector may, by a notification in the Official Gazette, lay down for the kind of Permitted Explosives used.

**Regulation 174** (Approved shotfiring apparatus).—No shot of a Permitted Explosive shall be fired except by means of a shot-firing apparatus of a type approved by the Chief Inspector and subject to such conditions as he may from time to time lay down by notification in the Official Gazette: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit the use of any other shot-firing apparatus.

**Regulation 175** (Precaution in gassy mines).—In any mine to which Regulation 144 applies, the following provisions shall have effect, namely—

(1) Notwithstanding anything contained in the regulations, no shot shall be stemmed or fired by any person who does not hold a Manager's or Overman's Certificate, or a Sirdar's Certificate together with Gas-testing Certificate.

(2) If in a ventilating district, presence of inflammable gas is detected in any place, no shothole shall be charged, stemmed or fired in that place or in any other place situated on its return side till such place has been cleared of gas and declared safe.

(3) Immediately before charging a shothole or a round of shotholes, and again before firing the shots, the shotfirer shall carefully test for inflammable gas at all places within a radius of 60 feet of the place of firing.

(4) No shothole shall be charged if any break is found therein, or if inflammable gas is found issuing therefrom.

(5) If after charging a shothole, inflammable gas is found in any place within the prescribed radius, no shot shall be fired until the place has been cleared of gas and declared safe.

**Regulation 176** (Inspections after shotfiring).—After a shot has been fired, the shot-firer shall not enter, or allow any other person to enter, the place until the area is free from dust, smoke or fumes. He shall, before any other person enters the place, make a careful examination and with his assistants, if any, make the place safe. No other person shall enter the place until the examination has been made and the place has been declared to be safe in all respects: Provided that where guards have been posted, they shall not be withdrawn until the place has been declared safe:

Provided further that in the case of opencast workings, after shots have been fired, an all-clear signal shall be given except in the case of a misfire.

**Regulation 177** (Misfires).—(1) The number of shots which explode shall be counted by the shotfirer and an other competent person authorised for the purpose; and unless it is certain that all the shots have been exploded, no person

shall re-enter, or be permitted to re-enter, the place until 30 minutes after the firing of shots; Provided that where shots are fired electrically, this interval may be reduced to not less than five minutes after the source of electricity has been disconnected from the cable.

(2) In the event of a misfire, the entrance or entrances to the working place shall be effectively fenced so as to prevent access; and no work shall be done therein until the misfire has been located and relieved. In opencast workings, it shall be sufficient to mark the place of the misfire with a red flag.

(3) In the event of a misfire, a second charge shall not be placed in the same hole.

(4) If the misfire contains a detonator, the leads or fuse thereof shall be attached by a string to the shotfiring cable or some distinctive marker.

(5) Except where the misfire is due to a faulty cable or a faulty connection, and the shot is fired as soon as practicable after the defect is remedied, another shot shall be fired in a relieving hole which shall be so placed and drilled in such a direction that at no point shall it be nearer than 12 inches from the misfired hole. The newhole shall be bored in the presence of a shotfirer, preferably the same person who fired the shot.

(6) After a relieving shot has been fired, a careful search for cartridges and detonators, if any, shall be made, in the presence of the shot-firer, amongst the material brought down by the shot: Provided that in the case of workings below-ground if not such cartridge or detonator is recovered, the tubs into which the material is loaded shall be marked and a further search made on the surface. As far as possible, the search for the detonators and cartridges and the loading of any coal, stone or debris which may contain a detonator, shall be carried out without the aid of tools.

(7) If a misfired hole is not dislodged by a relieving shot, the procedure laid down in sub-regulations (5) and (6) shall be repeated.

(8) When a misfired shot is not found, or when a misfired shot is not relieved, the shot-firer shall, before leaving the mine, give information of the failure to such official as may relieve or take over charge from him. He shall also record, in bound paged book kept for the purpose, a report on every misfire, whether suspected, and relieved or not relieved.

**Regulation 178 (Special precautions in stone drifts).—In stone drifts—**

- (a) after shots have been fired, all loose rock shall be removed from the face, and the area lying within a distance of four feet from the face shall be thoroughly cleaned or washed down with water and carefully examined for the presence of misfires or sockets. Unless the precautions herein specified have been taken, the next round of shots shall not be fired; and
- (b) if any socket is found, it shall be securely plugged with a suitable wooden plug; and no person other than an official shall remove or attempt to remove any such plug.

**Regulation 179 (Duties of shotfirer at the end of his shift).—Immediately after the end of his shift, the shotfirer—**

- (a) shall return all unused explosive to the magazine, or where a store or premises is provided under Regulation 160, to such store or premises; and
- (b) shall record, in a bound paged book kept for the purpose, the quantity of explosive taken, used and returned, the places where shots were fired, the number of cartridges used in each shot and the number of shots fired by him, and misfires, if any. Every such entry shall be signed and dated by him.

**Regulation 180 (General precaution regarding explosives).—(1)** No person shall attempt to remove any stemming or pull but any detonator lead, or remove any explosive, from shothole either before firing or after a misfire, or bore out a hole that has once been charged, or deepen or tamper with empty holes or sockets.

(2) No person, whilst handling explosives or engaged or assisting in the preparation of charges or in the charging of holes, shall smoke or carry or use a light other than an enclosed light, electric torch or lamp: Provided that this sub-regulation shall not prohibit the use of an open light for lighting fuses.

(3) No person shall take any light other than an electric torch or lamp into any explosive magazine or store or premises.

(4) No person shall have explosives in his possession except as provided for in these regulations, or secrets or keep explosives in a dwelling house.

(5) Any person finding any explosive in or about a mine shall deposit the same in the magazine or store or premises. Every such occurrence shall be brought to the notice of the manager.

## CHAPTER XV

### MACHINERY AND PLANT

**Regulation 181** (Use of certain machinery belowground).—(1) No internal combustion engine or steam boiler shall be used belowground in a mine except with the written permission of the Chief Inspector and subject to such conditions as he may specify.

(2) In every mine or part of a mine to which Regulation 144 applies, only flame-proof electric apparatus and equipment shall be used belowground unless otherwise provided for under the Indian Electricity Rules, 1937.

**Regulation 182** (General provisions about construction and maintenance of machinery).—All parts and working gears, whether fixed or movable, including the anchoring and fixing appliances, of all machinery and apparatus used as or forming part of the equipment of a mine, and all foundations in or to which any such appliances are anchored or fixed shall be of good construction, suitable material, adequate strength and free from patent defect, and shall be properly maintained.

**Regulation 183** (Apparatus under pressure).—(1) All apparatus used as or forming part of the equipment of a mine, being apparatus which contains or produces air, gas or steam at a pressure greater than atmospheric pressure shall be so constructed, installed and maintained as to obviate, so far as is reasonably practicable, any risk of fire, bursting, explosion or collapse or the production of noxious gases.

(2) The supply of air for air-compressors shall be drawn from a source free from dust and fumes.

**Regulation 184** (Precautions regarding moving parts of machinery).—(1) Every winch or windlass shall be provided with a stopper, pawl or other reliable holder.

(2) Every flywheel and every other dangerous exposed part of any machinery used as, or forming part of, the equipment of a mine shall be adequately fenced by suitable guards of substantial construction as may be necessary to prevent danger; and such guards shall be kept in position while the parts of the machinery are in motion or in use, but they may be removed for carrying out any examination, adjustment or repairs if adequate precautions are taken.

(3) No person shall, or shall be allowed to, repair, adjust, clean or lubricate machinery in motion where there is risk of injury.

(4) No person in close proximity to moving machinery shall wear, or be permitted to wear, loose outer clothing.

(5) No unauthorised person shall enter any engine room or in any way interfere with the engine.

**Regulation 185** (Engine room exits).—Every engine, motor, transformer and battery charging room, and every room in which highly inflammable materials are stored shall be kept clean, and be provided with at least two exits. Every such exit shall be properly maintained and kept free from obstruction.

**Regulation 186** (Examination and working of machinery).—(1) A competent person or persons appointed for the purpose shall, once at least in every 24 hours, make a thorough inspection of all machinery and plant in use, and record the result thereof in a bound paged book kept for the purpose. In respect of electrical machinery and plant, the competent person shall be an engineer or electrician holding qualifications specified in the Indian Electricity Rules, 1937.

(2) No machinery shall be operated otherwise than by or under the constant supervision of a competent person.

(3) If any person in charge of any machinery, apparatus or appliance observes any defect therein, he shall immediately report the fact to the manager, engineer or other competent person.

(4) In every mine to which Regulation 144 applies, no person shall be appointed to supervise or operate any electrical machinery, apparatus or appliance unless he holds a Gas-testing Certificate.

## CHAPTER XVI

### MISCELLANEOUS

**Regulation 187 (Fences).**—(1) Every tank or reservoir in or about a mine shall be kept securely fenced.

(2) Every fence erected on the surface shall, once at least in every seven days, be examined by a competent person. The result of every such inspection shall be recorded in a bound paged book kept for the purpose.

(3) Any fence, gate or barricade may be temporarily removed for the purpose of repairs or other operations, if adequate precautions are taken.

(4) If any dispute arises as to whether any fence, barrier or gate provided under the regulations is adequate, proper or secure or the precautions taken under sub-regulation (3) are adequate, it shall be referred to the Chief Inspector whose decision thereon shall be final.

**Regulation 188 (Notices).**—Where at any place smoking or unauthorised entry is prohibited, notices to that effect shall be posted at conspicuous places at every entrance to the place.

**Regulation 189 (Storage belowground of calcium carbide).**—Calcium carbide shall not be taken or kept below ground until about to be used, except in a secure metal case or container containing not more than one pound in weight thereof. No person shall have in the mine at any one time more than one such case or container.

**Regulation 190 (General safety).**—No person shall negligently or wilfully do anything likely to endanger life or limb in the mine, or negligently or wilfully omit to do anything necessary for the safety of the mine or of the persons employed therein.

**Regulation 191 (Information about sickness).**—Every official or competent person shall, in case of sickness or of lawful absence, give early and sufficient notice thereto to his superior official or the manager, so that a substitute may be arranged.

**Regulation 192 (Officials to be literate).**—No person shall be appointed as an official of a mine after the coming into force of these regulations, unless he is literate and conversant with the language of the district in which the mine is situated or with the language understood by a majority of the persons employed in the mine: Provided that so much of this regulation as requires a person to be conversant with the language of the district or of the majority of persons shall not apply to undermanagers, assistant managers, engineers and surveyors.

**Regulation 193 (Manpower Distribution Plan).**—During the first week of every month, a survey shall be made of the number of persons normally employed in each district and other places belowground in the mine; and a sketch plan showing the results of such a manpower survey shall be kept in the office of the mine. A copy of the plan shall also be kept with the attendance clerk.

**Regulation 194 (Sirdars and Overmen).**—(1) No person shall be appointed as a competent person under Regulations 34, 70, 93, 119(2), 122(5), 136(6), 137(3), 141(2), 143 and 145, unless he is the holder of either an Overman's or a Manager's Certificate.

(2) No person shall be appointed as a competent person under Regulations 113, 114, 117(6), 124, 127(5), 141(1) and 142, unless he is the holder of either a Sirdar's or an Overman's or a Manager's Certificate. In case of a mine to which Regulations 122(2) and 144 apply, every person holding a Sirdar's Certificate shall also hold a Gas-testing Certificate.

**Regulation 195 (Saving clauses).**—(1) Where under any regulation, a person is required to hold an Overman's Certificate, a person holding a Sirdar's Certificate endorsed for gas-testing shall be considered as qualified to carry out the duties thereunder until such date as the Central Government may notify in that behalf in the Official Gazette.

(2) Where under any regulation, a person is required to hold a Gas-testing Certificate, a person holding any certificate (granted under the regulation) endorsed for gas-testing shall be considered as qualified to carry out the duties thereunder until such date as the Central Government may notify in that behalf in the Official Gazette.

**Regulation 196** (Writing or reports).—If any person required to make any report by the regulations, rules or bye-laws or any order made thereunder is unable to write, he shall be present when his report is written for him, and shall have it read over to him, and shall then sign or attach his thumb-mark to it. The person writing the report shall certify that it has been read over to the person for whom it was written, and shall sign the same and date his signature.

**Regulation 197** (Payment of fees).—The fees payable under the regulations shall be paid directly into the Treasury or a branch of the State Bank of India, and the receipt of the Treasury or Bank shall be sent to the Chief Inspector along with the application to which the fee relates.

**Regulation 198** (Place of accident not to be disturbed).—When any accident in a mine results in serious bodily injury to three or more persons or in any loss of life, the place of accident shall not be disturbed or altered before the arrival or without the consent of an Inspector unless such disturbance or alteration is necessary to prevent further accidents, to remove bodies or to rescue persons from danger, or unless discontinuance of work at the place would seriously impede the working of the mine; Provided that should an Inspector fail to make an inspection within 72 hours of the time of the accident, work may be resumed at the place of the accident.

**Regulation 199** (Taking samples from mines).—Where for official purposes, an Inspector considers it necessary to take samples of coal, any rope or other material, the owner, agent or manager shall make over to him such samples in such quantities as he may require.

**Regulation 200** (Use of protective equipment).—Where it appears to the Regional Inspector or Chief Inspector that any person or class of persons is exposed to undue hazard by reason of the nature of his employment, he may, by a general or special order, require the provision and use of gloves, boots, goggles, tight-fitting clothing or other protective equipment.

**Regulation 201** (Powers of Chief Inspector to grant exemptions).—If the circumstances at any mine or part thereof are such as to render any provision of any regulations not reasonably practicable, the Chief Inspector may, by an order in writing and to such extent and subject to such conditions as he may specify, relax the said provisions.

**Regulation 202** (Signing of returns, notices and correspondence).—All returns and notices required under, or correspondence made in connection with, the provisions of the Act and of the regulations, rules, byelaws and orders made thereunder shall be signed by the owner, agent or manager of the mine: Provided that the owner may, by a Power of Attorney, delegate this function to any other specified person.

**Regulation 203** (Chief Inspector etc. to exercise powers of the Regional Inspector).—Any powers granted under these regulations to the Regional Inspector can also be exercised by the Chief Inspector or a Deputy Chief Inspector or any other Inspector authorised in writing for the purpose by the Chief Inspector.

**Regulation 204** (Appeals against orders of the Regional Inspector).—Whenever any dispute about any matter contained in the Act and in the regulations, rules, bye-laws and orders made thereunder arises between the owner, agent or manager and the Regional Inspector, the matter shall be referred to the Chief Inspector, whose decision thereon, unless otherwise prescribed under Regulation 205, shall be final.

**Regulation 205** (Appeals against certain orders of the Chief Inspector).—The owner or agent of any mine affected or likely to be affected by any order passed by the Chief Inspector under Regulation 31(2) Provisions to regulations 105, 106 and 107(2), may prefer an appeal to the Mining Board constituted under Section 12 of the Act, or if no Mining Board has been so constituted for the part of India in which the mine or part thereof is situated, to the Central Government; and the order of the Mining Board or the Central Government thereon shall be final.

## FIRST SCHEDULE

## FORM I

(See Regulations 3, 7, 8, 9)

*Notice of opening etc.*

From \_\_\_\_\_

To \_\_\_\_\_

1. The Chief Inspector, Dhanbad P. O., District Manbhumi.

2. \_\_\_\_\_

3. \_\_\_\_\_

Sir,

I have to furnish the following particulars of .....

Name of mine.....

Name of mineral worked .....

1. Situation of mine—Village, Thana, Sub-Division, District &amp; State.

2. Name and postal address of owner or Managing Agents, if any.

3. Particulars of situation (Post Office, Railway Station, distance, rest house, means of travelling, etc.)\*

4. Name and postal address of agent.

5. Name of manager and number and class of his certificate.

6. (a) first opening of the mine

(b) discontinuance, abandonment or closing of the mine

(c) re-opening of the mine

Date of (d) Occupation of present owner or change of ownership

(e) appointment or change of agent

(f) appointment or change of manager

7. Date on which it is intended to commence mining operations.\*

\* For new mines only.

Yours faithfully,

Owner/Agent/Manager.

## **FIRST SCHEDULE**

**FORM II**

[See Regulation 4]

*Return on Raisings, Despatches, Stocks of coal and Machinery in use for the month of* \_\_\_\_\_ 19\_\_\_\_

1. Name of colliery \_\_\_\_\_
2. Name of owner \_\_\_\_\_
3. Name of colliery siding or loading point \_\_\_\_\_
4. Grade of coal \_\_\_\_\_

## A. RAISINGS, DESPATCHES AND STOCKS.

## B. MACHINERY

Coal-cutting machines				Mechanical loaders				Conveyors		
No. in use	Type	Square feet cut	Coal cut (tons)	No. in use	Type	Coal loaded (tons)	Type	Length (feet)	Coal conveyed (tons).	

Certified that the information given above is correct.

Signature \_\_\_\_\_

Designation *Owner/Agent/Manager.* \_\_\_\_\_

Date \_\_\_\_\_

## INSTRUCTIONS

1. A separate return should be submitted in respect of each grade of coal produced.
2. Figures relating to despatches of coal should be given separately in respect of each loading point from which coal was despatched.
3. All figures should be rounded up to the nearest ton.
4. Columns 3 and 4 should include all coal brought to the surface, no matter to what purpose the coal may be put.
5. In column 5 should be included all coal consumed at or about the colliery in connection with colliery operation including domestic use and coal taken home by the workers.
6. In column 6 should be entered all coal used by the Colliery owners for the purpose of making Coke, no matter what the method of burning may be.
7. Adjustment in stocks made, if any, should be clearly indicated by means of foot-notes.

## FIRST SCHEDULE

## FORM III

[See Regulation 4]

*Monthly Return on Employment for ..... 19.....*

1. Name of the mine..... Name of owner.....

2. Address : Place ..... District ..... State .....

3. Number of working days during the month.....

	Aggregate No. of man-days worked		Aggregate No. of man-days lost on account of absence			Other causes	Total
	Men	Women	Sickness	Accident	Leave		

*Below ground :*

Miners &amp; Loaders

Others

*Opencast workings :*

Miners &amp; Loaders

Others

*Above ground*

TOTAL . . . . .

4. If there is any marked increase or decrease in attendance or absence, please account for it.

Certified that the information given above is correct.

Signature \_\_\_\_\_

Designation : Owner/Agent/Manager.

Date \_\_\_\_\_

## INSTRUCTIONS

(a) The information should cover all persons "employed" in the mine as defined in clause (b) of Section 2 of the Mines Act, 1952, including clerical and subordinate supervisory staff.

(b) Total number of man-days worked is obtained by adding the daily attendances for the whole month.

(c) Total number of man-days lost by absence is obtained by adding the daily absences for the whole month.

(d) Absences should include all cases in which a person is "scheduled to work" or is expected to turn up for work, but does not. All permanent employees are to be treated as "scheduled" to work. So far as temporary or casual employees are concerned, a person who attended work during the preceding week should be considered as scheduled to work during the week under consideration unless (i) he has reported his intention to quit, (ii) his services have been terminated by the management, or (iii) he does not turn up for work during the whole week; a person who has not worked during the preceding week, should be considered as "scheduled to work" only from the day on which he joins work during the week under consideration. Absences due to strike, lockout, lay-off or maternity leave should not be included as absences.

**FIRST SCHEDULE****FORM IV**

[See Regulation 4]

*Monthly return on hours of work and earnings for ..... 19*

1. Name of the mine..... Name of Owner.....  
 2. Address : Place ..... District ..... State .....  
 3. Information is required to be furnished in the following tabular form in respect of one complete working week during the month. (a)

Average daily attendance	Aggregate man-hours during the worked week(b)	Total cash payments for work done during the week (d)		
	Basic wages	Dearness allowance	Other cash payments	Total
	(c)			(e)

***Below ground—***

Overmen & Sirdars	.
Miners & loaders	.
Others	.

***Open cast workings—***

Overmen & Sirdars	.
Miners & loaders	.
Others	{ Men Women }

***Above Ground—***

Clerical & Supervisory staff	.
Others	{ Men Women }

4. Estimated value of concessions in kind given during the week Rs.....

5. Normal Hours of production shifts. From To

1st Shift	
2nd Shift	
3rd Shift	

6. If there is any major change in wages or hours of work as compared to the preceding month, please account for the change.

Certified that the information given above is correct.

Signature .....

Designation : Owner/Agent/Manager.

Date.....

**INSTRUCTIONS**

(a) The information should cover all persons "employed" as in Form III Particulars relating to payments etc., to monthly paid staff should be included on a *pro-rata* basis.

(b) Average daily attendance is obtained by dividing the aggregate number of attendances on all the shifts on all days during the week by the number of working days. Days on which the mine did not work for whatever cause should not be treated as working days.

(c) Aggregate number of man hours worked during the week is obtained by adding up for the whole week the number of man hours worked each day. The number of man hours worked on each day is obtained by summing up the number of hours worked by each person attending work on each of the shifts during the day, including overtime worked if any.

- (d) Total cash payments should include all remuneration payable and paid for work done during the week prior to deductions if any towards fines, provident fund contributions, etc. Employers' contributions to provident funds or on account of other welfare provisions should not be included. Bonuses not payable each pay-period should also not be included.
- (e) Including over-time payments.
- (f) Concessions in kind such as supply of food stuffs etc., free or at subsidised prices should be estimated in terms of the difference between the monetary value of the stuffs at cost prices and the value realised by sale at concessional prices.

### FIRST SCHEDULE

#### FORM V

[See Regulation 5]

*Annual Return for the year ending on the 31st December 19*

1. Name of mine
2. Postal address of mine
3. Date of opening
4. Date of closing (if closed)
5. Situation of mine
 

Name of owner	District
Postal address of owner	State
6. 
 

Name of Managing Agents (if any)	Name of Agent (if any) as defined in section 2(c) of the Mines Act 1952
Postal address of Managing Agents (if any)	Postal address of Agent
7. 
 

Name of Manager	Name of Manager
Postal address of Manager	Postal address of Manager
8. Other superior supervisory staff employed as at the end of the year.  
(Please give designations and numbers employed).
9. (a) Whether machinery is used.  
(b) Nature of power used if any (e.g. electricity steam, compressed air, etc.).

## FIRST SCHEDULE

## FORM VI

[See Regulation 5]

*Employment during the year ending on 31st December 19*

Classification	Total number of man days worked during the year by (a).			Number of days worked during the year	Average daily number of persons employed (b)			Total wages or salary bill for the year (c)	
	Direct Labour	Contract labour	Total		Men	Women	Adolescents	Total	(5)
(1)	(2A)	(2B)	(2C)	(3)	(4A)	(4B)	(4C)	(4D)	(5)
<i>Below ground—</i>									
Overmen & Sirdars									
Miners & Loaders									
Others.									
<i>Open-cast workings—</i>									
Overmen & Sirdars									
Miners & Loaders									
Others(d)									
<i>Above ground—</i>									
Clerical and Supervisory staff (excluding the superior Supervisory staff)									
Workers in the attached factory workshop or mineral dressing plant.									
Others									
<b>Total</b>									

## INSTRUCTIONS

(a) Obtained by adding up the daily attendances for the whole year.

(b) Obtained by dividing the number of man-days worked by the number of working days. The total shown in Column (4D) should agree with the quotient obtained by dividing the total shown in column (20) by the no. of working days shown in column (3).

(c) Include all cash payments including bonuses Employers' contributions to provide funds, welfare activities etc. and concessions in kind should not be included.

(d) Persons employed in their removal of overburden should be included among "Others" and not among "Miners and loaders".

## FIRST SCHEDULE

## FORM VII

[See Regulation 5]

*Type and aggregate horse-power of electrical apparatus.*(1) Electricity generated, purchased or received otherwise (in kwh).*Generated. Purchased or received*

- (a) For own use
- (b) For sale

(2) System of supply (whether continuous current or alternating current)

Voltage of supply.

Periodicity.

Source of supply.

(3) Voltage at which current is used for—*Above ground Below ground*

Lighting ..	..
Power ..	..

(4) Length of cables in feet

- (i) High pressure ..
- (ii) Medium pressure ..

(5) Total number and aggregate horse-power of motors installed above ground for —

	In use	In reserve	
No. of units	Total H.P.	No. of units	Total H.P.

Winding  
Ventilation  
Haulage  
Pumping

Workshops including foundry,  
smithy, etc. Coal washing  
screening or handling plants  
Miscellaneous (specify.)

**TOTAL**(6) Total number and aggregate horse-power of motors installed below ground for :—;

Haulage . . . . .  
Ventilation . . . . .  
Pumping . . . . .  
Coal-cutting machines . . . .  
Other Portable machines . . .  
(coal drills, etc.)  
Conveyors, Loaders, scrapers,  
etc.

Electric Traction (locomotive etc.)  
Miscellaneous (specify). . .

**Total . . . . .**

**FIRST SCHEDULE****FORM VIII**

[See Regulation 5]

*Type and aggregate horse-power of machinery and equipment (other than electrical apparatus)*

	No. of units	Total H.P.	In use	In reserve
			No. of units	Total H.P.
I	(a) Boilers . . . . .			
	(b) Steam Turbines . . . . .			
	(c) Diesel Engines . . . . .			
	(d) Gasoline, Gas or oil Engines other than Diesel Engines . . . . .			
	(e) Hydraulic Turbines or water wheels . . . . .			
	(f) Air Compressors . . . . .			
	Total . . . . .			
II	Total number and aggregate horse-power of machinery installed above ground for—			
	Winding . . . . .			
	Ventilation . . . . .			
	Haulage . . . . .			
	Pumping . . . . .			
	Coal washing, screening or handling plants workshops including Smityh, Foundry, etc.			
	Miscellaneous (specify) . . . . .			
	Total . . . . .			
III	Total number and aggregate horse-power of machinery installed below ground for—			
	Winding . . . . .			
	Ventilation . . . . .			
	Haulage . . . . .			
	Pumping . . . . .			
	Miscellaneous (specify) . . . . .			
	Total . . . . .			

**FIRST SCHEDULE**

**FORM IX**

[ See Regulation 5]

*Explosives, safety lamps and mechanical ventilators*

Explosives		Safety lamps			Mechanical ventilators		
Name of explosive	Quantity used in lbs.	Number of detonators used	Name and type of safety lamps*	No. of safety lamps and method of locking	Name and size of mechanical ventilators	Position installed	Average total quantity of air delivered per minute
		Electrical Ordinary		Lead rivet Magnetic			

\* Mention type as electrical, flame type, etc.

**FIRST SCHEDULE**

**FORM X**

[See Regulation 5]

*Output for year ending on the 31st December 19*

Coal including rubble & sack	Opening stocks on 1st Janu- ary 19	Raisings (including colliery consump- tion and coal used for coke making)	Total value of raisings*	Total of columns 2 and 3	Despatches	Colliery consumption of coal used for coke making	Coal deli- vered for coking on colliery if any	Shortages due to fire, rains and other causes	Closing stocks on 31st Decem- ber 19	Total of columns 6, 7, 8, 9 and 10
I	2	3	4	5	6	7	8	9	10	II
	Tons	Tons	Rs.	Tons	Tons	Tons	Tons	Tons	Tons	Tons
GRADE										
Selected A	.	.	.	.	.	.	.	.	.	.
Selected B	.	.	.	.	.	.	.	.	.	.
Grade I	.	.	.	.	.	.	.	.	.	.
Grade II	.	.	.	.	.	.	.	.	.	.
Grade III	.	.	.	.	.	.	.	.	.	.
<b>TOTAL</b>	.	.	.	.	.	.	.	.	.	.

\*Value means the pit-head value, actual or estimated.

Coal despatched to coke factories  
included in Col. 6. Tons.

*Note.—The total in column 5 must be the same as the total column 11.  
Figures should be given separately for each grade of coal raised.*

## (b) For Coke

Type of coke	Opening stocks	Coke made	Total of columns 1 and 2	Coke despatched	Colliery consumption	Shortage if any	Closing stocks	Total of columns 5,6, 7 & 8	Total value of coke made*
	1	2	3	4	5	6	7	8	10
Coke (hard)									
Coke (soft)									

Note.—The total of column 4 must be the same as the total in column 9.

\* Value means the ex-mine value.

## FIRST SCHEDULE

## FORM XI

[See Regulation 5]

*Leave with wages and compensatory holidays.*

Monthly paid	Others
employees	

1. No. of persons entitled to leave with wages during the year . . . . .
2. No. of persons granted leave during the year . . . . .
3. Aggregate no. of man-days of leave granted during the year . . . . .
4. Total amount paid as leave wages . . . . .
5. No. of persons exempted from Section 28 (weekly holidays). . . . .
6. Aggregate No. of compensatory holidays earned during the year and carried over from previous year. . . . .
7. Aggregate No. of compensatory holidays granted . . . . .
8. Aggregate No. of compensatory holidays due to be granted at the end of year . . . . .

## FIRST SCHEDULE

## FORM XII

[See Regulation 5]

*Creches, Canteens, Rest-shelters, etc.*

1. Do you maintain a creche ? (*Vide Mines Creches Rules*). If so,
  - (a) do you supply milk to the children ?
  - (b) do you supply food to the children ?
  - (c) Number of creche attendants employed.
  - (d) No. of nurses employed --Whole time—Part time.
  - (e) Average daily attendance of children at the creches. . . . .
2. Do you maintain a Canteen ? (*Vide Mines Rule 64*)  
If so,
  - (a) do you supply hot meals ? . . . . .
  - (b) do you supply snacks ? . . . . .
  - (c) do you supply tea, coffee or other beverages ? . . . . .
  - (d) expenditure incurred, if any, on the canteen by the management during the year— . . . . .
3. Do you maintain rest shelters for the workers ? (*Vide Mines Rules 62*). If so, how many ? . . . .  
State floor area—
4. Do you have welfare Officers ? (*Vide Mines Rules 72*).  
If so, how many ?
5. Do you have pit-head baths ?
6. Do you have an ambulance room ? (*Vide Mines Rules 43*).

Certified that information given in Forms V to XII above is correct.

Signature .....

Designation : Owners/Agent/Manager,

Date :

## FIRST SCHEDULE

## FORM XIII

[See Regulation 10]

## NOTICE OF OCCURRENCE

Dated \_\_\_\_\_ 19\_\_\_\_

From \_\_\_\_\_

**To**

1. The Chief Inspector of Mines, Dhanbad P.O., District Manbhumi.

2. The District Magistrate/District Collector\*

3. The Coal Mines Labour Welfare Commissioner, Dhanbad P.O., District Manbhumi.

Sir

I have to furnish the following particulars of a fatal accident / a serious accident/a dangerous occurrence which occurred at the \_\_\_\_\_ Mines.

1. Situation of mine (Village, Thana, District & State)	Mineral worked	Name and postal address of owner.
--	----------------	--------------------------------------

2. Date and hour of occurrence	Place and location in mine	Number of persons	
		Killed	Seriously injured

3. Classification of occurrence*	Cause and description
----------------------------------	-----------------------

4. (a) Name and persons killed.*	Nature of employment	Age	Sex	Nature of injury and if fatal, cause of death
----------------------------------	----------------------	-----	-----	---

(b) Names of person injured\*

\*Particulars in respect of every person killed, or injured, in Form XIV are enclosed.

Yours faithfully

Owner/Agent/Manager.

\* Under one or other of the following heads, namely :

- (1) Explosions and ignitions of inflammable gas and/or coal dust ;
- (2) Falls of ground (a) Falls of roof (b) Falls of side or face ;
- (3) Haulage (a) above ground (b) below ground ;
- (4) In shafts (a) overwinding of cages or other means of conveyance ;  
 (b) breakage of ropes, chains or drawgear ;  
 (c) while ascending or descending by machinery ;  
 (d) by falling ;  
 (e) by falling objects (excluding falls of ground) ;  
 (f) miscellaneous ;
- (5) Explosives ;
- (6) Machinery (a) above ground ; (b) below ground ;
- (7) Suffocation by gases ;
- (8) Irruption of water ;
- (9) Premature collapse of workings ;
- (10) Outbreak of fire or spontaneous heating ;
- (11) At railway sidings belonging to the mine ;
- (12) Electricity ; and
- (13) Miscellaneous (a) above ground ; (b) below ground.

## FIRST SCHEDULE

### FORM XIV

(See Regulation 9)

#### *Particulars of Deceased/Injured Person*

(To be given separately in respect of every deceased/injured worker)

##### 1. General:

- (i) Name of mine
- (ii) Owner
- (iii) District
- (iv) State
- (v) Mineral produced
- (vi) Name of injured worker

##### 2. Time of accident:

- (i) Date, time and shift in which the accident occurred
- (ii) Number of shifts worked per day
- (iii) Time when the worker began work on the day of the accident

##### 3. Occupation and experience of the worker:

- (i) Job he was doing at the time of accident
- (ii) Was it his regular occupation?
- (iii) If yes, length of experience at the occupation; at your mine including previous experience
- (iv) If no, how long employed at this job
- (v) Total experience in mining, coal and non-coal
- (vi) Details of experience in mining work

##### 4. Place of accident:

- (i) If underground, state:
  - (a) Whether depillaring area or development area
  - (b) Seam No.
  - (c) Dimensions at the place of accident
- (ii) If surface, state whether on railway, tramway, power plant or elsewhere (to be specified)
- (iii) If other, state whether open-workings, shaft or elsewhere (to be specified)

##### 5. Nature of injury:

- (i) State whether fracture, amputation, laceration, bruise, sprain, crushing injury or other (to be specified)
- (ii) Part of body injured (to be specified precisely)

**6. Degree of disability:**

- (i) If fatal, date and time of expiry
- (ii) If permanent disablement, specify:
  - (a) the part or parts of the body lost, if any
  - (b) the part or parts of body gone out of use
  - (c) whether disablement was total or partial
- (iii) If temporary disablement, number of days forced to remain idle

**7. Return to duty:**

- (i) Date when returned to work
- (ii) Whether returned to regular job or some other (to be specified)

**8. Responsibility for the accident:**

- (i) Was any safety regulations contravened?
- (ii) If so, by whom?
- (iii) What action was taken against the offender?
- (iv) Could the accident have been avoided and if so how?

**9. Compensation:**

State amount of compensation paid, if any

**FIRST SCHEDULE****FORM XV**

[See Regulation 10]

*Notice of Disease Notified under Section 25.*

From: \_\_\_\_\_

To \_\_\_\_\_

1. The Chief Inspector of Mines, Dhanbad, P. O. District Manbhumi.
2. The District Magistrate/District Collector
3. Coal Mines Welfare Commissioner, Dhanbad, P. O. District Manbhumi.

Dated \_\_\_\_\_-19\_\_\_\_\_

Sir,

I have to furnish the following particulars with respect to an occupational disease contacted by a person employed in the \_\_\_\_\_ mine.

1. Name of owner, agent or manager \_\_\_\_\_
2. Situation and postal address of mine \_\_\_\_\_
3. Mineral worked \_\_\_\_\_
4. Name and postal address of owner \_\_\_\_\_  
*Particulars of persons affected*
5. Name (in Block Capitals) \_\_\_\_\_
6. Caste or surname \_\_\_\_\_
7. Permanent address :—Village \_\_\_\_\_ District \_\_\_\_\_ Thana \_\_\_\_\_ State \_\_\_\_\_
8. Sex \_\_\_\_\_
9. Date of birth or age \_\_\_\_\_
10. Occupation \_\_\_\_\_
11. Date of commencement of employment \_\_\_\_\_  
*Particulars of diseases, etc.:*
12. Nature of disease from which the person is suffering (state stage) \_\_\_\_\_
13. Date of detection of disease \_\_\_\_\_
14. Name and address of Medical Practitioner suspecting disease \_\_\_\_\_

Date of signature.....

Signature \_\_\_\_\_

Owner \_\_\_\_\_

Agent \_\_\_\_\_

Manager \_\_\_\_\_

**SECOND SCHEDULE**  
 [See Regulation 58(2)]  
**Conventions**

NAME	SYMBOL	REMARK
BRICK, STONE OR CONCRETE VENTILATION STOPPINGS		
BRATTICE		
FIRE DAMS OR SEALS		
EXPLOSION PROOF STOPPINGS		
WATER DAMS		
DOORS		
REGULATORS		R
AIR CROSSINGS		
TELEPHONES		
UNDERGROUND AMBULANCE STN.		
DIRECTION OF AIR CURRENT	 { INTAKE ← RETURN →	
AUXILIARY FAN		

NAME	SYMBOL	REMARK
SHAFT	○	
ABANDONED SHAFT	●	
INCINE	↙ ↘ ↙ ↘	
PILLARS & GALLERIES	□□□□□□□□	
FAULT	— FAULT — ft	
DYKE	— DYKE —	
DRIFT	□□□□□□□□	DRIFT
SURVEY LINES & STATIONS	○○○○○○○○	X ○ <sub>1</sub> ○ <sub>2</sub> ○ <sub>3</sub> ○ <sub>4</sub>
QUARTERLY SURVEY LINE	□□□□□□□□	DATA DATA DATA DATA

NAME	SYMBOL	REMARK
GOAF		
SUBSIDENCE		
UNDERGROUND COAL BARRIER		
BOUNDARY OF LEASE HOLD		
BENCH MARK		
SURFACE CONTOUR		
UNDERGROUND SPOT LEVEL	+ 104.96	
BORE HOLE (WITH DIAMETER OF HOLE NOTED NEXT TO IT)		
SECTION OF SEAM		

**THIRD SCHEDULE**  
**FORMS FOR SYSTEMATIC TIMBERING RULES**

(See Regulation 108)

**FORM 1A**

*Depillaring in Bord and Pillar Workings*

1. These rules shall apply to all depillaring areas in district in Colliery.
2. *Support of Goaf Edges:*  
Cogs shall be set at all goaf edges at intervals of not more than 10 feet.  
**OR**  
Two rows of props shall be set not more than 2 feet apart, at all goaf edges.
3. *Support of Working Places:*
  - (a) Props shall be set at a maximum interval of ..... feet between props in the same row and ..... feet between rows of props in all the areas under actual extraction, the front row being not more than.....feet from the face.
  - (b) Cogs shall be set at all entrances to the areas under extraction, and also at intervals of not more than 12 feet in the areas under actual extraction.
  - (c) Cross-bars shall be set as and when required.
4. *Support of Galleries and Splits:*
  - (a) Props shall be set at a maximum interval of .....feet between props in the same row and a maximum interval of ..... feet between rows of props, in all galleries and splits within a distance of two pillars from the pillar under extraction, or a distance of 100 feet, whichever is greater.
  - (b) Cogs shall be set at all junctions of galleries and splits within a distance of two pillars from the pillar under extraction or a distance of 100 feet, whichever is greater.
5.
  - (a) The lids and wedges used with the props shall have a width not less than the diameter of the prop, a thickness not less than 3 inches and a length not less than 18 inches.
  - (b) Where floor coal is taken, props shall not be left on coal stumps, and the shorter props shall immediately be replaced with longer props. Where roof coal is taken, the shorter props shall immediately be replaced with longer props and the lip of coal shall be supported with a cog.
  - (c) The timber used in the construction of cogs shall not be less than 4 feet in length and shall have at least two opposite sides sawn flat to provide suitable bearing surfaces.
6.
  - (a) Props shall be set on solid floor and not on loose packing or material. They shall be kept tight against the roof. Where props are to be set on sand, a flat base piece not less than 2 inches thick, 9 inches wide and 30 inches long shall be used.
  - (b) Cross-bars shall be supported on props or in 18 inch deep holes made in the sides of pillars. Every cross-bar shall be made tight against the roof; and if lagging is necessary for the purpose, the number of laggings used on a cross-bar shall not be less than one for every 3-foot length of the bar, and the laggings shall be kept tight.
  - (c) Cogs shall be set on solid floor and not on loose packing or materials. They shall be kept tight against the roof to ensure maximum contact between the timber and the roof.
7. *Any other provisions:*
8. *Additional supports shall be erected as and when necessary.*

Signature of Manager.

## FORM IB

## | Longwall Workings |

1. These rules shall apply to all longwall workings in district in Colliery.

## 2. Support on the face:

- (a) Props shall be set at a maximum interval of feet between feet between feet between rows of props, the front row being not more than from the face.
- (b) Bars/Cogs shall be set at a maximum interval of feet along the face.
- (c) The two ends of the face shall be supported with cogs set at intervals of not more than feet.

## 3. Support of levels:

- (a) The top level or out-bye road shall be supported by
- (b) The bottom level or in-bye road shall be supported by

4. (a) The lids and wedges used with the props shall have a width not less than the diameter of the prop, a thickness not less than 3 inches and a length not less than 18 inches.

(b) Where floor coal is taken, props shall not be left on coal stumps and the shorter props shall immediately be replaced with longer props. Where roof coal is taken, the shorter props shall immediately be replaced with longer props, and the lip of coal shall be supported with a cog.

(c) The timber used in the construction of cogs shall not be less than 4 feet in length and shall have at least two opposite sides sawn flat to provide suitable bearing surfaces.

5. (a) Props shall be set on solid floor and not on loose packing or material. They shall be kept tight against the roof. Where props are to be set on sand, a flat base piece not less than 2 inches thick, 9 inches wide and 30 inches long shall be used.

(b) Cross-bars shall be supported on props or in 18-inch deep holes made in the sides of pillars. Every cross-bar shall be made tight against the roof; and if lagging is necessary for the purpose, the number of laggings used on a cross-bar shall not be less than one for every 3-feet length of the bar, and the laggings shall be kept tight.

(c) Cogs shall be set on solid floor and not on loose packing or materials. They shall be kept tight against the roof to ensure maximum contact between the timber and the roof.

## 6. Support by packwalls or sand:

The packs or stowing shall be so advanced that, at no time, the distance between the face and a pack or stowing is more than feet.

## 7. Any other provisions:

8. Additional supports shall be erected as and when necessary.

Signature of Manager.

## FORM II

## | Other Workings |

1. These rules shall apply to all development workings in district in Colliery.

## 2. All galleries shall be supported with—

- (a) Cogs set at a maximum interval of feet.
- (b) Cross-bars set on cogs/props/sides at a maximum interval of feet along the roof/side; and
- (c) Props set at a maximum interval of feet in rows, not more than feet apart.

3. All junctions of galleries shall be supported with—
  - (a) Cogs set at a maximum interval of feet.
  - (b) Cross-bars set on cogs/props/sides at a maximum interval of feet.
  - (c) Props set at a maximum interval of feet in rows not more than feet apart.
4. (a) The lids and wedges used with the props shall have a width not less than the diameter of the prop, a thickness not less than 3 inches and a length not less than 18 inches.  
(b) The timber used in the construction of cogs shall not be less than 4 feet in length and shall have at least two opposite sides sawn flat to provide suitable bearing surfaces.
5. (a) Props shall be set on solid floor and not on loose packing or material. They shall be kept tight against the roof.  
(b) Cross-bars shall be supported on cogs, props or in 18-inch deep holes made in the side of pillars. Every cross-bar shall be made tight against the roof or sides; and if lagging is necessary for the purpose, the number of laggings used on a cross-bar shall not be less than one for every 3-foot length of the bar and the laggings shall be kept tight.  
(c) Cogs shall be set on solid floor and not on loose packing or materials. They shall be kept tight against the roof to ensure maximum contact between the timber and the roof.

6. Any other provisions:

7. Additional supports shall be erected as and when necessary.

Signature of Manager.

[No. M-156(8)/49.]

P. D. COMMAR, Under Secy.

